03jun01 09:20:00 User208600 Session D1394.1

File 411:DIALINDEX(R) DIALINDEX(R) (c) 2001 The Dialog Corporation plc
Your SELECT statement is: s dsp? and (hypersensitive or hyper (W)sensitive or HR)

Ref	Items	File
N1	396	654: US PAT.FULL._1990-2001/MAY 29
N2	382	349: PCT Fulltext_1983-2001/UB=20010531, UT=20010517
N3	105	158: DIOGENES(R)_1976-2001/May W4
N4	100	148: Gale Group Trade & Industry DB_1976-2001/Jun 01
N5	88	348: EUROPEAN PATENTS_1978-2001/May W02
N6	86	16: Gale Group PROMT(R)_1990-2001/Jun 01
N7	61	20: World Reporter_1997-2001/Jun 03
N8	58	810: Business Wire_1986-1999/Feb 28
N9	52	155: MEDLINE(R)_1966-2001/Jun W1
N10	48	73: EMBASE_1974-2001/May W4
N11	44	613: PR Newswire_1999-2001/Jun 03
N12	44	653: US Pat.Fulltext_1980-1989
N13	39	5: Biosis Previews(R)_1969-2001/May W4
N14	34	34: SciSearch(R) Cited Ref Sci_1990-2001/Jun W1
N15	32	440: Current Contents Search(R)_1990-2001/Jun W2
N16	27	621: Gale Group New Prod.Annou.(R)_1985-2001/Jun 01
N17	24	484: Periodical Abstracts Plustext_1986-2001/May W4
N18	24	636: Gale Group Newsletter DB(TM)_1987-2001/Jun 01
N19	23	275: Gale Group Computer DB(TM)_1983-2001/Jun 01
N20	23	624: McGraw-Hill Publications_1985-2001/May 31
N21	22	156: Toxline(R)_1965-2000/Dec
N22	21	47: Gale Group Magazine DB(TM)_1959-2001/Jun 01
N23	21	76: Life Sciences Collection_1982-2001/Mar
N24	18	649: Gale Group Newswire ASAP(TM)_2001/May 30
N25	16	345: Inpadoc/Fam.& Legal Stat_1968-2001/UD=200121
N26	14	144: Pascal_1973-2001/May W4
N27	12	15: ABI/Inform(R)_1971-2001/Jun 02
N28	12	50: CAB Abstracts_1972-2001/Apr
N29	12	647: CMP Computer Fulltext_1988-2001/May W4
N30	10	9: Business & Industry(R)_Jul/1994-2001/Jun 01
N31	10	180: Federal Register_1985-2001/May 31
N32	9	2: INSPEC_1969-2001/Jun W1
N33	8	8: Ei Compendex(R)_1970-2001/May W4
N34	8	10: AGRICOLA_70-2001/May
N35	8	71: ELSEVIER BIOBASE_1994-2001/Jun W1
N36	7	112: UBM Industry News_1998-2001/Jun 01
N37	7	149: TGG Health&Wellness DB(SM)_1976-2001/May W4
N38	7	357: Derwent Biotechnology Abs_1982-2001/Jun B2
N39	7	652: US Patents Fulltext_1971-1979
N40	5	44: Aquatic Sci&Fish Abs_1978-2001/Jun
N41	5	103: Energy SciTec_1974-2001/May B1
N42	5	610: Business Wire_1999-2001/Jun 03
N43	4	35: Dissertation Abstracts Online_1861-2001/Jun
N44	4	80: TGG Aerospace/Def.Mkts(R)_1986-2001/Jun 01
N45	4	108: AEROSPACE DATABASE_1962-2001/MAY
N46	4	442: AMA Journals_1982-2001/May B1
N47	3	98: General Sci Abs/Full-Text_1984-2001/Apr
N48	3	660: Federal News Service_1991-2001/May 01
N49	2	6: NTIS_1964-2001/Jun W3
N50	2	29: Meteor.& Geoastro.Abs._1970-2001/May
N51	2	202: Information Science Abs._1966-2001/ISSUE 04
N52	2	211: Gale Group Newsearch(TM)_2001/Jun 01
N53	2	229: Drug Info._2000/Q3
N54	2	285: BioBusiness(R)_1985-1998/Aug W1
N55	2	388: PEDS: Defense Program Summaries_1999/May
N56	2	635: Business Dateline(R)_1985-2001/Jun 02
N57	2	637: Journal of Commerce_1986-2001/May 31
N58	2	646: Consumer Reports_1982-2001/May
N59	2	745: Investext(R) PDF Index_1999--2001/Jun W1
N60	2	813: PR Newswire_1987-1999/Apr 30
N61	1	18: Gale Group F&S Index(R)_1988-2001/Jun 01
N62	1	28: Oceanic Abst._1964-2001/Jun
N63	1	33: Aluminium Ind Abs_1968-2001/Jun
N64	1	41: Pollution Abs_1970-2001/Jun
N65	1	99: Wilson Appl. Sci & Tech Abs_1983-2001/Apr
N66	1	117: Water Resour.Abs._1967-2001/Apr
N67	1	151: HealthSTAR_1975-2000/Dec
N68	1	264: DIALOG Defense Newsletters_1989-2001/Jun 01
N69	1	342: Derwent Patents Citation Indx_1978-01/200125
N70	1	347: JAPIO_OCT 1976-2001/JAN(UPDATED 010507)

76 files have one or more items; file list includes 256 files.

SYSTEM:OS - DIALOG OneSearch
File 155:MEDLINE(R) 1966-2001/Jun W1 c) format only 2000 Dialog Corporation
File 73:EMBASE 1974-2001/May W4(c) 2001 Elsevier Science B.V.
File 5:Biosis Previews(R) 1969-2001/May W4 (c) 2001 BIOSIS
File 156:Toxline(R) 1965-2000/Dec (c) format only 2000 The Dialog Corporation

Set	Items	Description
S1	161	DSP? AND (HYPERSENSITIVE OR HYPER(W)SENSITIVE OR HR)
S2	9396	ERWINIA OR AMYLOVORA
S3	19	S1 AND S2
S4	19	ID (sorted in duplicate order)
S5	142	S1 NOT S3
S6	61	RD (unique items)
S7	661	HRP AND (HR OR (HYPERSENSITIVE OR (HYPER(W)SENSITIVE) (W) - RESPONSE))
S8	103	S7 AND S2
S9	84	S8 NOT S1
S10	84	ID (sorted in duplicate order)
S11	555	S7 NOT (S2 OR S1)
S12	303	RD (unique items)
S13	147	S12 NOT (HORSERADISH OR HORSE(W)RADISH)

4/6/1 (Item 1 from file: 155) 07734838 90355838 PMID: 2117695
Cloning of a large gene cluster involved in Erwinia amylovora CFBP1430 virulence. May 1990

4/6/2 (Item 2 from file: 73) 04298671 EMBASE No: 1990181227
Cloning of a large gene cluster involved in Erwinia amylovora CFBP1430 virulence 1990

4/6/3 (Item 3 from file: 5) 07259308 BIOSIS NO.: 000090039184
CLONING OF A LARGE GENE CLUSTER INVOLVED IN ERWINIA- AMYLOVORA CFBP1430 VIRULENCE 1990

4/6/4 (Item 4 from file: 156) 02548267 Subfile: TOXBIB-90-355838
Cloning of a large gene cluster involved in Erwinia amylovora CFBP1430 virulence. Publication Year: 1990

4/6/5 (Item 5 from file: 155) 09660966 98086111 PMID: 9426142
DspA , an essential pathogenicity factor of Erwinia amylovora showing homology with AvrE of Pseudomonas syringae, is secreted via the Hrp secretion pathway in a DspB-dependent way. Dec 1997

4/6/6 (Item 6 from file: 73) 07085614 EMBASE No: 1997367477
DspA, an essential pathogenicity factor of Erwinia amylovora showing homology with AvrE of Pseudomonas syringae, is secreted via the Hrp secretion pathway in a DspB-dependent way 1997

4/6/7 (Item 7 from file: 5) 11265617 BIOSIS NO.: 199800046949
DspA, an essential pathogenicity factor of Erwinia amylovora showing homology with AvrE of Pseudomonas syringae, is secreted via the Hrp secretion pathway in a DspB-dependent way. 1997

4/6/8 (Item 8 from file: 155) 11141668 21171042 PMID: 11277443
Genetic organization of the hrp gene cluster and dspAE/BF operon in Erwinia herbicola pv. gypsophilae. Mar 2001

4/6/9 (Item 9 from file: 5) 12944570 BIOSIS NO.: 200100151719
Genetic organization of the hrp gene cluster and dspAE/BF operon in Erwinia herbicola pv. gypsophilae. 2001

4/6/10 (Item 10 from file: 155) 09871140 98115919 PMID: 9448330
Homology and functional similarity of an hrp-linked pathogenicity locus, dspEF , of Erwinia amylovora and the avirulence locus avrE of Pseudomonas syringae pathovar tomato. Feb 3 1998

4/6/11 (Item 11 from file: 73) 07222548 EMBASE No: 1998090439
Homology and functional similarity of an hrp-linked pathogenicity locus, dspEF, of Erwinia amylovora and the avirulence locus avrE of Pseudomonas syringae pathovar tomato 03 FEB 1998

4/6/12 (Item 12 from file: 5) 11353712 BIOSIS NO.: 199800135044
Homology and functional similarity of an hrp-linked pathogenicity locus, dspEF, of Erwinia amylovora and the avirulence locus avrE or Pseudomonas syringae pathovar tomato. 1998

4/6/13 (Item 13 from file: 156) 03583799 Subfile: TOXBIB-98-115919
Homology and functional similarity of an hrp-linked pathogenicity locus, dspEF , of Erwinia amylovora and the avirulence locus avrE of Pseudomonas syringae pathovar tomato. Publication Year: 1998

4/6/14 (Item 14 from file: 155) 08046041 94012466 PMID: 8407779
Penicillin-binding proteins from Erwinia amylovora: mutants lacking PBP2 are avirulent. Oct 1993

4/6/15 (Item 15 from file: 73) 05524334 EMBASE No: 1993292433
Penicillin-binding proteins from Erwinia amylovora: Mutants lacking PBP2 are avirulent 1993

4/6/16 (Item 16 from file: 5) 08977168 BIOSIS NO.: 199396128669
Penicillin-binding proteins from Erwinia amylovora: Mutants lacking PBP2 are avirulent. 1993

4/6/17 (Item 17 from file: 5) 08407361 BIOSIS NO.: 000094125015
A RELIABLE STRATEGY FOR THE STUDY OF DISEASE AND HYPERSENSITIVE REACTIONS INDUCED BY ERWINIA- AMYLOVORA 1992

4/6/18 (Item 18 from file: 73) 05684415 EMBASE No: 1994101087
Virulence, growth, and surface characteristics of Erwinia amylovora mutants with altered pathogenicity 1994

4/6/19 (Item 19 from file: 5) 09281136 BIOSIS NO.: 199497289506
Virulence, growth, and surface characteristics of Erwinia amylovora mutants with altered pathogenicity. 1994

4/7/1 (Item 1 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
07734838 90355838 PMID: 2117695
Cloning of a large gene cluster involved in Erwinia amylovora CFBP1430 virulence.
Barny MA; Guinebretiere MH; Marcais B; Coissac E; Paulin JP; Laurent J
Laboratoire de Pathologie Vegetale, I.N.R.A., Paris, France.
Molecular microbiology (ENGLAND) May 1990, 4 (5) p777-86, ISSN 0950-382X Journal Code: MOM
Languages: ENGLISH Document type: Journal Article Record type: Completed
Phage MudIIPR13 insertional mutagenesis of Erwinia amylovora CFBP1430 allowed us to isolate 6900 independent CmR mutants. The frequencies of different auxotrophs in this population indicated that MudIIPR13 had inserted randomly in E. amylovora . Screening of 3500 CmR mutants on (i) apple calli and (ii) pear and apple seedlings led to the isolation of 19 non-pathogenic prototrophic single mutants, four of which expressed a LacZ+ hybrid protein. Expression of the fusion proteins was temperature sensitive. The 19 mutants could be separated into two classes according to their behaviour on tobacco: 13 were unable to elicit the hypersensitive response on tobacco (Hrp-) while six still could (Dsp -). The 19 MudIIPR13 insertions all mapped in the same virulence region. The MudIIPR13 insertions of Hrp- mutants were all clustered on the left part of this region, while the MudIIPR13 insertions of Dsp - mutants were located on the right part. All of the mutants except one, which proved to have a large deletion of the entire virulence region, could be complemented functionally by cosmids from an E. amylovora CFBP1430 genomic library. No hybridization was observed between the cosmid pPV130, which complemented 12 hrp::MudIIPR13 mutations, and the hrp genes from Pseudomonas syringae pv. phaseolicola (Lindgren et al., 1986), P. syringae pv. tomato (N.J. Panopoulos, unpublished data) or P. solanacearum (Boucher et al., 1987). Further analysis of the large virulence region will allow mapping of the border of the virulence region and facilitate the study of the function and regulation of the hrp and dsp genes.

4/7/5 (Item 5 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
09660966 98086111 PMID: 9426142
DspA , an essential pathogenicity factor of Erwinia amylovora showing homology with AvrE of Pseudomonas syringae, is secreted via the Hrp secretion pathway in a DspB-dependent way.
Gaudriault S; Malandrin L; Paulin JP; Barny MA
Laboratoire de pathologie vegetale INA-PG/INRA, Paris, France.
Molecular microbiology (ENGLAND) Dec 1997, 26 (5) p1057-69, ISSN 0950-382X Journal Code: MOM
Languages: ENGLISH Document type: Journal Article Record type: Completed
In Erwinia amylovora , the dsp region, required for pathogenicity on the host plant but not for hypersensitive elicitation on tobacco, is separated from the hrp region by 4 kb. The genetic analysis reported in this paper showed that this 4kb region is not required for pathogenicity on pear seedlings. The environmental conditions allowing expression of a dsp ::lacZ fusion were examined: expression was barely detected in rich medium at 30 degrees C, and the highest expression was observed in M9 galactose minimal medium at 25 degrees C. A dsp ::uidA fusion appeared to be expressed only in a HrpL-proficient strain, indicating that the dsp region, like the hrp region, is positively controlled via the alternative a factor HrpL. Sequence analysis revealed that the dsp cluster encodes two genes, dspA (5517 bp) and dspB (420 bp), and that the insertions leading to the dsp ::lacZ and the dsp ::uidA fusions were within dspA . A HrpL-dependent promoter sequence (GGAACC-N15-CAACA) was identified upstream of dspA , and primer extension analysis detected four transcriptional starts 7, 8, 9 and 10 bp downstream of this sequence. A sigma70 promoter sequence (TTGCCC-N16-GATAAT) was observed upstream of dspB . The functionality of this second promoter was confirmed by complementation analysis. This promoter allowed constitutive expression of dspB , as measured by the expression of a dspB ::uidA fusion in rich medium. In M9 galactose medium, however, HrpL was shown to activate dspB , as expression of the dspB ::uidA fusion was twofold higher in a HrpL+ background than in a HrpL- background. Transposon insertions in either dspA or dspB led to a non-pathogenic phenotype. Thus, both DspA and DspB were required for E. amylovora pathogenicity, as dspB could be expressed independently of dspA . DspA and DspB were visualized as polypeptides with apparent sizes of 190 kDa and 15.5 kDa, respectively, when encoded in the T7 polymerase/promoter system. DspA , which showed homology with the protein predicted from the partial sequence of Pseudomonas syringae pv. tomato avrE transcriptional unit III, was shown to be secreted into the external medium via the Hrp secretion pathway. DspB was predicted to be acidic, like the Syc chaperone of Yersinia. A chaperone role for DspB was suggested further by the fact that DspA secretion required a functional DspB protein.

4/7/10 (Item 10 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
09871140 98115919 PMID: 9448330
Homology and functional similarity of an hrp-linked pathogenicity locus, dspEF , of Erwinia amylovora and the avirulence locus avrE of Pseudomonas syringae pathovar tomato.
Bogdanove AJ; Kim JF; Wei Z; Kolchinsky P; Charkowski AO; Conlin AK; Collmer A; Beer SV
Department of Plant Pathology, Cornell University, Ithaca, NY 14853, USA.
Proceedings of the National Academy of Sciences of the United States of America (UNITED STATES) Feb 3 1998, 95 (3) p1325-30, ISSN 0027-8424 Journal Code: PV3 Languages: ENGLISH
Document type: Journal Article Record type: Completed
The "disease-specific" (dsp) region next to the hrp gene cluster of Erwinia amylovora is required for pathogenicity but not for elicitation of the hypersensitive reaction. A 6.6-kb apparent operon, dspEF , was found responsible for this phenotype. The operon contains genes dspE and dspF and is positively regulated by hrpL. A BLAST search revealed similarity in the dspE gene to a partial sequence of the avrE locus of Pseudomonas syringae pathovar tomato. The entire avrE locus was sequenced. Homologs of dspE and dspF were found in juxtaposed operons and were designated avrE and avrF. Introduced on a plasmid, the dspEF locus rendered P. syringae pv. glycinea race 4 avirulent on soybean. An E. amylovora dspE mutant, however, elicited a hypersensitive reaction in soybean. The avrE locus in trans restored pathogenicity to dspE strains of E. amylovora , although restored strains were low in virulence. DspE and AvrE are large (198 kDa and 195 kDa) and hydrophilic. DspF and AvrF are small (16 kDa and 14 kDa) and acidic with predicted amphipathic alpha helices in their C termini; they resemble chaperones for virulence factors secreted by type III secretion systems of animal pathogens.

4/7/14 (Item 14 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
08046041 94012466 PMID: 8407779
Penicillin-binding proteins from Erwinia amylovora: mutants lacking PBP2 are avirulent.
Milner JS; Dymock D; Cooper RM; Roberts IS
Department of Microbiology, University of Leicester, United Kingdom.
Journal of bacteriology (UNITED STATES) Oct 1993, 175 (19) p6082-8, ISSN 0021-9193 Journal Code: HH3 Languages: ENGLISH Document type: Journal Article Record type: Completed
Radiolabelled penicillin G was used to examine penicillin-binding proteins (PBPs) from Erwinia amylovora (OT1). This procedure identified seven PBPs with molecular masses ranging from 22 to 83 kDa. E. amylovora PBPs were compared with those from Escherichia coli (JM101) and from two spherical, avirulent TnphoA mutants derived from OT1. Radiolabelled penicillin G bound to only six proteins from the spherical mutants which lacked a 69-kDa PBP. The spherical mutants could be complemented by the cloned E. coli pbpA-rodA operon, which restored both cell shape and virulence to apple seedlings. This suggested that the E. amylovora 69-kDa PBP is probably the functional equivalent of the E. coli PBP2 protein. Southern blot analysis using the E. coli rodA and pbpA genes as radiolabelled probes showed that TnphoA had inserted into the E. amylovora equivalent of the E. coli rodA-pbpA operon. Southern blots to chromosomal DNAs of the two spherical mutants, using the cloned hrp and dsp genes from E. amylovora as radiolabelled probes, confirmed that the TnphoA insertions were not located in the region of the E. amylovora chromosome postulated to encode known virulence factors. Both of the spherical TnphoA mutants

synthesized amounts of extracellular polysaccharide equivalent to those synthesized by the wild-type strain (OT1), were resistant to lysis in distilled water and to lysozyme, and elicited the hypersensitive response on nonhost plants. These results indicate a possible role for cell shape in the virulence of this plant pathogen.

6/6/1 (Item 1 from file: 155) 11001166 21066152 PMID: 11139505
DSP1 , an HMG-like protein, is involved in the regulation of homeotic genes. Jan 2001

6/6/2 (Item 2 from file: 155) 10922520 20482800 PMID: 11028225
Biodistribution of liposomes of terbutaline sulfate in guinea pigs. Oct 2000

6/6/3 (Item 3 from file: 155) 10764687 20294734 PMID: 10836745
In vitro cytotoxic effect of N-(phosphonacetyl)-L-aspartic acid in liposome against C-26 murine colon carcinoma. Apr 2000

6/6/4 (Item 4 from file: 155) 10750401 98224176 PMID: 9563078
Effect of dose and release rate on pulmonary targeting of liposomal triamcinolone acetonide phosphate. Mar 1998

6/6/5 (Item 5 from file: 155) 10401155 20046763 PMID: 10580796
Mast cell production of TNF-alpha induced by substance P evidence for a modulatory role of substance P-antagonists. Nov 15 1999

6/6/6 (Item 6 from file: 155) 09819494 98333271 PMID: 9668674
Noradrenergic modulation of methamphetamine-induced striatal dopamine depletion. May 30 1998

6/6/7 (Item 7 from file: 155) 09527697 97256704 PMID: 9103545
Influence of drug release characteristics on the therapeutic activity of liposomal mitoxantrone. Apr 1997

6/6/8 (Item 8 from file: 155) 09490621 95111930 PMID: 7812694
Membrane modification by negatively charged stearyl-polyoxyethylene derivatives for thermosensitive liposomes: reduced liposomal aggregation and avoidance of reticulbendothelial system uptake. 1994

6/6/9 (Item 9 from file: 155) 09251324 97130531 PMID: 8976294
Rescue of testicular function after acute experimental torsion. Jan 1997

6/6/10 (Item 10 from file: 155) 08844842 96203981 PMID: 8622563
Immunosuppressants and TGF-beta 1 accelerated and prolonged the nitric oxide/oxyradicals-dependent suppression by dexamethasone in paw edema of mice. 1996

6/6/11 (Item 11 from file: 155 08678003 96084198 PMID: 8525126
Properties of lavage material from excised lungs ventilated at different temperatures. Jul 1995

6/6/12 (Item 12 from file: 155) 08325428 95122141 PMID: 7821983
Effects of DSP -4-induced depletion of brain norepinephrine on appetitive and aversive memory retrieval. Oct 1994

6/6/13 (Item 13 from file: 155) 08174684 94272742 PMID: 8004321
Composition of human pulmonary surfactant varies with exercise and level of fitness. Jun 1994

6/6/14 (Item 14 from file: 155) 08097659 94051998 PMID: 8234172
Rates of systemic degradation and reticulbendothelial system (RES) uptake of thermosensitive liposome encapsulating cisplatin in rats. Sep 1993

6/6/15 (Item 15 from file: 155) 08094040 93310227 PMID: 8321835
Prolongation of the circulation time of doxorubicin encapsulated in liposomes containing a polyethylene glycol-derivatized phospholipid: pharmacokinetic studies in rodents and dogs. May 1993

6/6/16 (Item 16 from file: 155) 08001481 93139989 PMID: 8093719
Dopaminergic agonists impair latent learning in mice: possible modulation by noradrenergic function. Jan 1993

6/6/17 (Item 17 from file: 155) 07619511 92336356 PMID: 1631940
Evidence that 15-deoxysperguafin inhibits natural antibody production but fails to prevent hyperacute rejection in a discordant xenograft model. Jul 1992

6/6/18 (Item 18 from file: 155) 07552123 92018653 PMID: 1717871
Norepinephrine does not contribute to methamphetamine-induced changes in hippocampal serotonergic system. Jun 1991

6/6/19 (Item 19 from file: 155) 07355767 90370953 PMID: 2168567
Studies on the interaction between ICV effects of CRF and CNS noradrenaline depletion. Jun 1990

6/6/20 (Item 20 from file: 155) 06976500 93134607 PMID: 1336631
Short-time cytotoxicity of mussel extracts: a new bioassay for okadaic acid detection. Nov 1992

6/6/21 (Item 21 from file: 155) 06970694 92314433 PMID: 1617200
Transcriptional organization and expression of the large hrp gene cluster of Pseudomonas solanacearum. Mar-Apr 1992

6/6/22 (Item 22 from file: 155) 06968568 92210040 PMID: 1555795
An evaluation of the mouse bioassay applied to extracts of 'diarrhoetic' shellfish toxins. Feb 1992

6/6/23 (Item 23 from file: 155) 06864347 92324509 PMID: 1385583
The effect of the neurotoxin DSP4 on the development of a predisposition in the domestic chick. May 1992

6/6/24 (Item 24 from file: 155) 06585210 89246597 PMID: 2719722
Effects of the catecholaminergic neurotoxin N-(2-chloroethyl)-N-ethyl-2-b romobenzylamine (DSP-4) on adrenal chromaffin cells in culture. May 1 1989

6/6/25 (Item 25 from file: 155) 06148717 87298929 PMID: 3843732
Noradrenaline and learning: effects of the noradrenergic neurotoxin DSP4 on imprinting in the domestic chick. Aug 1985

6/6/26 (Item 26 from file: 155) 06046150 86010544 PMID: 4045563
Is stability a key parameter in the accumulation of phospholipid vesicles in tumors? Oct 1985

6/6/27 (Item 27 from file: 155) 05956440 86135888 PMID: 3948812
Integrated substrate utilization by perinatal lung. 1986

6/6/28 (Item 28 from file: 155) 05955215 86146066 PMID: 3841576
Pulmonary surfactant lipid synthesis from ketone bodies, lactate and glucose in newborn rats. Dec 1985

6/6/29 (Item 29 from file: 155) 05751402 87025517 PMID: 3021111
Opioid peptidergic systems modulate the activity of beta-adrenergic mechanisms during memory consolidation processes. Sep 1986

6/6/30 (Item 30 from file: 155) 05576174 89267665 PMID: 2471289
Attenuation of 2-methoxyethanol-induced testicular toxicity in the rat by simple physiological compounds. Jun 1 1989

6/6/31 (Item 31 from file: 155) 05480520 89304017 PMID: 2545351
Stimulation of Na+,K+-ATPase activity in certain membranes of the rat central nervous system (CNS) by acute administration of desipramine (DMI). Jun 1989

6/6/32 (Item 32 from file: 155) 05469887 92053692 PMID: 2519426
[Effect of endotracheal instillation of hydrochloric acid on the contents of alveolar surfactant in rats] Efecto de la instilacion endotraqueal de acido clorhidrico sobre el contenido de surfactante alveolar en la rata. Jul 1989

6/6/33 (Item 33 from file: 155) 05302381 89360493 PMID: 2768812
Acute action of DSP-4 on central norepinephrine axons: biochemical and immunohistochemical evidence for differential effects. Sep 1989

6/6/34 (Item 34 from file: 155) 05184601 88152333 PMID: 3345869
Early experience influences adult retention of aversively motivated tasks in normal, but not DSP4-treated rats. Mar 1988

6/6/35 (Item 35 from file: 155) 05062548 87171317 PMID: 3560967
The pharmacological effects of acute and chronic clenbuterol treatments after lesions of central noradrenergic nerve terminals. Oct-Dec 1986

6/6/36 (Item 36 from file: 155) 04991075 86311649 PMID: 3837857
Ejaculations induced by p-chloroamphetamine in the rat. Aug 1985

6/6/37 (Item 37 from file: 155) 04960871 85298631 PMID: 4034624
Suppressant effect of REM sleep deprivation on neophobia in normal rats and in rats with selective DSP -4 induced damage of locus coeruleus neurons. Jul 1985

6/6/38 (Item 38 from file: 155) 04951156 85270743 PMID: 4023026
Behavioral responses of high and low active male rats to the chronic ingestion of desipramine. Jun 1985

6/6/39 (Item 39 from file: 155) 04926421 85048750 PMID: 6498834
Mechanism of action of arenesulfonylhydrazones of 2-pyridinecarboxaldehyde 1-oxide in L1210 cells. Dec 1984

6/6/40 (Item 40 from file: 155) 04732551 84222078 PMID: 6233616
Relationship between the severity of experimental diabetes and altered lung phospholipid metabolism. Jul 1984

6/6/41 (Item 41 from file: 155) 04133198 84079966 PMID: 6651862
Disposition of intact liposomes of different compositions and of liposomal degradation products. Nov 15 1983

6/6/42 (Item 42 from file: 155) 04129380 83085021 PMID: 6848703
Tumor-imaging potential of liposomes loaded with In-111-NTA: biodistribution in mice. Jan 1983

6/6/43 (Item 43 from file: 155) 03784618 83155302 PMID: 6831433
Relationship of spontaneous chemical transformation of arylsulfonylhydrazones of 2-pyridinecarboxaldehyde 1-oxide to anticancer activity. May 1983

6/6/44 (Item 44 from file: 155) 03701443 83140786 PMID: 6897667
Source of lung surfactant phospholipids: comparison of palmitate and acetate as precursors. Dec 1982

6/6/45 (Item 45 from file: 155) 02954813 76097386 PMID: 1060758
The relationship between daily sperm production as determined by quantitative testicular histology and daily sperm output in the stallion. Oct 1975

6/6/46 (Item 46 from file: 155) 02828972 76010851 PMID: 1161049
On the mechanism of the accumulation of 3H-bretylium in peripheral sympathetic nerves. 1975

6/6/47 (Item 47 from file: 155) 02669238 76210405 PMID: 179827
Alterations in splanchnic cyclic nucleotide levels in splanchnic artery occlusion shock and their modification by dexamethasone. May 1976

6/6/48 (Item 1 from file: 73) 10755157 EMBASE No: 2000235961
Thermosensitive liposomes and localised hyperthermia - An effective bimodality approach for tumour management 2000

6/6/49 (Item 2 from file: 73) 06287253 EMBASE No: 1995316527
Alpha-2 adrenergic modulation of sleep: Time-of-day-dependent pharmacodynamic profiles of dexmedetomidine and clonidine in the rat 1995

6/6/50 (Item 3 from file: 73) 03320336 EMBASE No: 1987072913
Monitoring dopamine metabolism in the brain of the freely moving rat 1986

6/6/51 (Item 4 from file: 73) 03231767 EMBASE No: 1986074344
Pulmonary surfactant lipid synthesis from ketone bodies, lactate and glucose in newborn rats 1985

6/6/52 (Item 5 from file: 73) 02851780 EMBASE No: 1985195739
Noradrenaline and learning: Effects on the noradrenergic neurotoxin DSP4 on imprinting in the domestic chick 1985

6/6/53 (Item 6 from file: 73 02839503 EMBASE No: 1985183462
Behavioral responses of high and low active male rats to the chronic ingestion of desipramine 1985

6/6/54 (Item 7 from file: 73) 02101186 EMBASE No: 1982204282
Brain 3,4-dihydroxyphenylethyleneglycol levels are dependent on central noradrenergic neuron activity 1982

6/6/55 (Item 8 from file: 73) 01524598 EMBASE No: 1979246552
Human fetal lung type II pneumonocytes in monolayer cell culture: The influence of oxidant stress, cortisol environment, and soluble fibroblast factors 1979

6/6/56 (Item 9 from file: 73) 00338459 EMBASE No: 1975110817
Detection of dengue cell surface antigens by peroxidase labeled antibodies and immune cytolysis 1974

6/6/57 (Item 1 from file: 5) 12577792 BIOSIS NO.: 200000331294
Thermosensitive liposomes and localised hyperthermia: An effective bimodality approach for tumour management. 2000

6/6/58 (Item 2 from file: 5) 09079357 BIOSIS NO.: 199497087727
Inhibitory effect of parthenium (Parthenium hysterophorus L.) residue on growth of water hyacinth (Eichhornia crassipes Mart Solms.) II. Relative effect of flower, leaf, stem, and root residue. 1993

6/6/59 (Item 3 from file: 5) 08165123 BIOSIS NO.: 000093140571
AN EVALUATION OF THE MOUSE BIOASSAY APPLIED TO EXTRACTS OF DIARRHOEIC SHELLFISH TOXINS 1992

6/6/60 (Item 4 from file: 5) 05755022 BIOSIS NO.: 000084103429
FUNCTIONAL ABNORMALITIES OF LUNG SURFACTANT IN EXPERIMENTAL ACUTE ALVEOLAR INJURY IN THE DOG 1987

6/6/61 (Item 5 from file: 5) 05196151 BIOSIS NO.: 000082036773
STRUCTURE-ACTIVITY RELATIONSHIP IN THE EFFECTS OF DELTA-SLEEP-INDUCING PEPTIDE ON RAT SLEEP 1986

6/7/21 (Item 21 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
06970694 92314433 PMID: 1617200
Transcriptional organization and expression of the large hrp gene cluster of Pseudomonas solanacearum.
Arlat M; Gough CL; Zischek C; Barberis PA; Trigalet A; Boucher CA
Laboratoire de Biologie Moleculaire des RelationsPlantes-Microorganismes, CNRS-INRA, Castanet Tolosan, France.
Molecular plant-microbe interactions (UNITED STATES) Mar-Apr 1992, 5 (2) p187-93, ISSN 0894-0282 Journal Code: A9P Languages: ENGLISH Document type: Journal Article Record type: Completed
Cloning and localized mutagenesis of the larger cluster of hrp genes of Pseudomonas solanacearum strain GMI1000 allowed the definition of the borders of this cluster, which now extends about 2 kb to the left of the insert of the previously described plasmid pVir2 (Boucher et al. 1987, J. Bacteriol. 169:5626-5632). The size of the cluster has also been expanded 3 kb to the right to include a region previously described as dsp ; our present data demonstrate that insertions occurring in these 3 kb lead to leaky mutations affecting both pathogenicity on tomato and ability to induce the hypersensitive response (HR) on tobacco. Therefore, the size of the entire hrp gene cluster is estimated to be about 22 kb. The use of transposon Tn5-B20, which promotes transcriptional gene fusions, allowed us to demonstrate that the hrp gene cluster is organized in a minimum of six transcriptional units, which are transcribed when the culture is grown in minimal medium but are repressed during growth in rich medium or in the presence of peptone or Casamino Acids. The level of expression in minimal medium is modulated by the carbon source provided; pyruvate is the best inducer. Under these conditions the level of expression observed in vitro appears to be representative of the actual expression observed in planta.

10/6/1 (Item 1 from file: 5) 09911004 BIOSIS NO.: 199598365922
Altered expression of Erwinia amylovora HRP genes in tobacco leaves pretreated with bacterial protein-lipopolysaccharides. 1995

10/6/2 (Item 2 from file: 155) 09856653 98389667 PMID: 9721291
Characterization of the hrpC and hrpRS operons of Pseudomonas syringae pathovars syringae, tomato, and glycinea and analysis of the ability of hrpF, hrpG, hrcC, hrpT, and hrpV mutants to elicit the hypersensitive response and disease in plants. Sep 1998

10/6/3 (Item 3 from file: 73) 07409717 EMBASE No: 1998297907
Characterization of the hrpC and hrpRS operons of Pseudomonas syringae pathovars syringae, tomato, and glycinea and analysis of the ability of hrpF, hrpG, hrcC, hrpT, and hrpV mutants to elicit the hypersensitive response and disease in plants 1998

10/6/4 (Item 4 from file: 5) 11665897 BIOSIS NO.: 199800447628
Characterization of the hrpC and hrpRS operons of Pseudomonas syringae pathovars syringae, tomato, and glycinea and analysis of the ability of hrpF, hrpG, hrcC, hrpT, and hrpV mutants to elicit the hypersensitive response and disease in plants. 1998

10/6/5 (Item 5 from file: 5) 09957923 BIOSIS NO.: 199598412841
Cellular recognition in plant-bacteria interactions: Biological and molecular aspects. 1995

10/6/6 (Item 6 from file: 5) 06918173 BIOSIS NO.: 000038058039
CLONING AND PRELIMINARY CHARACTERIZATION OF AN HRP GENE CLUSTER FROM ERWINIA- AMYLOVORA 1989

10/6/7 (Item 7 from file: 155) 09851625 98374330 PMID: 9707625
A cloned Erwinia chrysanthemi Hrp (type III protein secretion) system functions in Escherichia coli to deliver Pseudomonas syringae Avr signals to plant cells and to secrete Avr proteins in culture. Aug 18 1998

10/6/8 (Item 8 from file: 5) 11623857 BIOSIS NO.: 199800406069
A cloned Erwinia chrysanthemi Hrp (type III protein secretion) system functions in Escherichia coli to deliver Pseudomonas syringae Avr signals to plant cells and to secrete Avr proteins in culture. 1998

10/6/9 (Item 9 from file: 73) 07410627 EMBASE No: 1998305625
A cloned Erwinia chrysanthemi Hrp (type III protein secretion) system functions in Escherichia coli to deliver Pseudomonas syringae Avr signals to plant cells and to secrete Avr proteins in culture 18 AUG 1998

10/6/10 (Item 10 from file: 5) 12514635 BIOSIS NO.: 200000268137
The dual function in virulence and host range restriction of a gene isolated from the pPATHEhg plasmid of Erwinia herbicola pv. gypsophilae. 2000

10/6/11 (Item 11 from file: 155) 10829210 20289080 PMID: 10830268
The dual function in virulence and host range restriction of a gene isolated from the pPATH (Ehg) plasmid of Erwinia herbicola pv. gypsophilae. Jun 2000

10/6/12 (Item 12 from file: 73) 05707314 EMBASE No: 1994113778
Detection and identification of phytopathogenic Xanthomonas strains by amplification of DNA sequences related to the hrp genes of Xanthomonas campestris pv. Vesicatoria 1994

10/6/13 (Item 13 from file: 155 08184097 94288590 PMID: 8017904
Detection and identification of phytopathogenic Xanthomonas strains by amplification of DNA sequences related to the hrp genes of Xanthomonas campestris pv. vesicatoria. Apr 1994

10/6/14 (Item 14 from file: 5) 09236252 BIOSIS NO.: 199497244622
Detection and identification of phytopathogenic Xanthomonas strains by amplification of DNA sequences related to the hrp genes of Xanthomonas campestris pv. vesicatoria. 1994

10/6/15 (Item 15 from file: 5) 09939461 BIOSIS NO.: 199598394379
Effect of induced protection of the expression of hrp-genes of Erwinia amylovora in tobacco leaves. BOOK TITLE: INRA Colloquia; Plant pathogenic bacteria ORIGINAL LANGUAGE BOOK TITLE: Colloques de l'INRA; Plant pathogenic bacteria. 1994

10/6/16 (Item 16 from file: 5) 09939459 BIOSIS NO.: 199598394377
Electrolyte leakage from host and non host plants associated with hrp genes of necrogenic bacteria. BOOK TITLE: INRA Colloquia; Plant pathogenic bacteria ORIGINAL LANGUAGE BOOK TITLE: Colloques de l'INRA; Plant pathogenic bacteria. 1994

10/6/17 (Item 17 from file: 155) 08420326 95036538 PMID: 7949326
Erwinia chrysanthemi hrp genes and their involvement in soft rot pathogenesis and elicitation of the hypersensitive response. Sep-Oct 1994

10/6/18 (Item 18 from file: 5) 09542301 BIOSIS NO.: 199497550671
Erwinia chrysanthemi hrp genes and their involvement in soft rot pathogenesis and elicitation of the hypersensitive response. 1994

10/6/19 (Item 19 from file: 156) 02726471 Subfile: TOXBIB-95-036538
Erwinia chrysanthemi hrp genes and their involvement in soft rot pathogenesis and elicitation of the hypersensitive response. Publication Year: 1994

10/6/20 (Item 20 from file: 155) 08716411 96172740 PMID: 8589405
Erwinia chrysanthemi harpinEch: an elicitor of the hypersensitive response that contributes to soft-rot pathogenesis. Jul-Aug 1995

10/6/21 (Item 21 from file: 5) 09975056 BIOSIS NO.: 199598429974
Erwinia chrysanthemi hrpn-Ech: An elicitor of the hypersensitive response that contributes to soft-rot pathogenesis. 1995

10/6/22 (Item 22 from file: 5
09911012 BIOSIS NO.: 199598365930 Erwinia amylovora hrpN mutants, blocked in harpin synthesis, express a reduced virulence on host plants and elicit variable hypersensitive reactions on tobacco. 1995

10/6/23 (Item 23 from file: 155) 08869230 96198177 PMID: 8626302
Erwinia amylovora secretes harpin via a type III pathway and contains a homolog of yopN of Yersinia spp. Mar 1996

10/6/24 (Item 24 from file: 73) 06426629 EMBASE No: 1996087017
Erwinia amylovora secretes harpin via a type III pathway and contains a homolog of yopN of Yersinia spp. 1996

10/6/25 (Item 25 from file: 5) 10320297 BIOSIS NO.: 199698775215
Erwinia amylovora secretes harpin via a type III pathway and contains a homolog of yopN of Yersinia spp. 1996

10/6/26 (Item 26 from file: 156) 03449605 Subfile: TOXBIB-96-198177
Erwinia amylovora secretes harpin via a type III pathway and contains a homolog of yopN of Yersinia spp. Publication Year: 1996

10/6/27 (Item 27 from file: 155) 06999713 92193274 PMID: 1372313
Expression of Erwinia amylovora hrp genes in response to environmental stimuli. Mar 1992

10/6/28 (Item 28 from file: 73) 04988370 EMBASE No: 1992128586
Expression of Erwinia amylovora hrp genes in response to environmental stimuli 1992

10/6/29 (Item 29 from file: 5) 08140407 BIOSIS NO.: 000093127555
EXPRESSION OF ERWINIA- AMYLOVORA HRP GENES IN RESPONSE TO ENVIRONMENTAL STIMULI 1992

10/6/30 (Item 30 from file: 156) 02569781 Subfile: TOXBIB-92-193274
Expression of Erwinia amylovora hrp genes in response to environmental stimuli. Publication Year: 1992

10/6/31 (Item 31 from file: 5) 07394089 BIOSIS NO.: 000040019748
FUNCTIONAL HOMOLOGY BETWEEN A LOCUS OF ESCHERICHIA-COLI AND THE HRP GENE CLUSTER OF ERWINIA- AMYLOVORA 1990

10/6/32 (Item 32 from file: 5) 07869824 BIOSIS NO.: 000092129190
FURTHER CHARACTERIZATION OF AN HRP GENE CLUSTER OF ERWINIA- AMYLOVORA 1991

10/6/33 (Item 33 from file: 5) 07335454 BIOSIS NO.: 000090115356
GENE FOR PATHOGENICITY AND ABILITY TO CAUSE THE HYPERSENSITIVE REACTION CLONED FROM ERWINIA- AMYLOVORA 1990

10/6/34 (Item 34 from file: 155) 09092926 97048707 PMID: 8893538
hrp gene-dependent induction of hin1: a plant gene activated rapidly by both harpins and the avrPto gene-mediated signal. Oct 1996

10/6/35 (Item 35 from file: 5) 10626030 BIOSIS NO.: 199699247175
Hrp Gene-dependent induction of hin1: A plant gene activated rapidly by both harpins and the avrPto gene-mediated signal. 1996

10/6/36 (Item 36 from file: 156) 03465657 Subfile: TOXBIB-97-048707
hrp gene-dependent induction of hin1: a plant gene activated rapidly by both harpins and the avrPto gene-mediated signal. Publication Year: 1996

10/6/37 (Item 37 from file: 5) 07006176 BIOSIS NO.: 000038101092
HRP GENES ARE KEY GENES CONTROLLING PLANT PATHOGENICITY AMONG BACTERIA 1989

10/6/38 (Item 38 from file: 155) 08738721 95349395 PMID: 7623665
The hrp gene locus of Pseudomonas solanacearum, which controls the production of a type III secretion system, encodes eight proteins related to components of the bacterial flagellar biogenesis complex. Mar 1995

10/6/39 (Item 39 from file: 73) 06088947 EMBASE No: 1995119436
The hrp gene locus of Pseudomonas solanacearum, which controls the production of a type III secretion system, encodes eight proteins related to components of the bacterial flagellar biogenesis complex 1995

10/6/40 (Item 40 from file: 5) 09825528 BIOSIS NO.: 199598280446
The hrp gene locus of Pseudomonas solanacearum, which controls the production of a type III secretion system, encodes eight proteins related to components of the bacterial flagellar biogenesis complex. 1995

10/6/41 (Item 41 from file: 155) 06976034 93113006 PMID: 1472716
hrp genes of Pseudomonas solanacearum are homologous to pathogenicity determinants of animal pathogenic bacteria and are conserved among plant pathogenic bacteria. Sep-Oct 1992

10/6/42 (Item 42 from file: 155) 09457922 97197534 PMID: 9045830
The hrpA and hrpC operons of Erwinia amylovora encode components of a type III pathway that secretes harpin. Mar 1997

10/6/43 (Item 43 from file: 73) 06789758 EMBASE No: 1997071260
The hrpA and hrpC operons of Erwinia amylovora encode components of a type III pathway that secretes harpin 1997

10/6/44 (Item 44 from file: 5) 10833956 BIOSIS NO.: 199799455101
The hrpA and hrpC operons of Erwinia amylovora encode components of a type III pathway that secretes harpin. 1997

10/6/45 (Item 45 from file: 156) 03582123 Subfile: TOXBIB-97-197534
The hrpA and hrpC operons of Erwinia amylovora encode components of a type III pathway that secretes harpin. Publication Year: 1997

10/6/46 (Item 46 from file: 155) 08800997 96042097 PMID: 7592386
hrpL activates Erwinia amylovora hrp gene transcription and is a member of the ECF subfamily of sigma factors. Nov 1995

10/6/47 (Item 47 from file: 73) 06295937 EMBASE No: 1995333723
hrpL activates Erwinia amylovora hrp gene transcription and is a member of the ECF subfamily of sigma factors 1995

10/6/48 (Item 48 from file: 5) 10107318 BIOSIS NO.: 199698562236
HrpL activates Erwinia amylovora hrp gene transcription and is a member of the ECF subfamily of sigma factors. 1995

10/6/49 (Item 49 from file: 156) 02790293 Subfile: TOXBIB-96-042097
hrpL activates Erwinia amylovora hrp gene transcription and is a member of the ECF subfamily of sigma factors. Publication Year: 1995

10/6/50 (Item 50 from file: 155) 06970825 92320301 PMID: 1621099
Harpin, elicitor of the hypersensitive response produced by the plant pathogen Erwinia amylovora. Jul 3 1992

10/6/51 (Item 51 from file: 73) 05098183 EMBASE No: 1992238399
Harpin, elicitor of the hypersensitive response produced by the plant pathogen Erwinia amylovora 1992

10/6/52 (Item 52 from file: 5) 08315753 BIOSIS NO.: 000094078076
HARPIN ELICITOR OF THE HYPERSENSITIVE RESPONSE PRODUCED BY THE PLANT PATHOGEN ERWINIA- AMYLOVORA 1992

10/6/53 (Item 53 from file: 156) 02551553 Subfile: TOXBIB-92-320301
Harpin, elicitor of the hypersensitive response produced by the plant pathogen Erwinia amylovora. Publication Year: 1992

10/6/54 (Item 54 from file: 155) 07149481 94075235 PMID: 8253684
HrpI of Erwinia amylovora functions in secretion of harpin and is a member of a new protein family. Dec 1993

10/6/55 (Item 55 from file: 73) 05599697 EMBASE No: 1994010453
HrpI of Erwinia amylovora functions in secretion of harpin and is a member of a new protein family 1993

10/6/56 (Item 56 from file: 5) 09065312 BIOSIS NO.: 199497073682
HrpI of Erwinia amylovora functions in secretion of harpin and is a member of a new protein family. 1993

10/6/57 (Item 57 from file: 156) 02672277 Subfile: TOXBIB-94-075235
HrpI of Erwinia amylovora functions in secretion of harpin and is a member of a new protein family. Publication Year: 1993

10/6/58 (Item 58 from file: 155) 09892270 98422475 PMID: 9748455
HrpW of Erwinia amylovora , a new harpin that contains a domain homologous to pectate lyases of a distinct class. Oct 1998

10/6/59 (Item 59 from file: 73) 07438739 EMBASE No: 1998347126
HrpW of Erwinia amylovora, a new harpin that contains a domain homologous to pectate lyases of a distinct class 1998

10/6/60 (Item 60 from file: 5) 11719539 BIOSIS NO.: 199800501270
HrpW of Erwinia amylovora, a new harpin that contains a domain homologous to pectate lyases of a distinct class. 1998

10/6/61 (Item 61 from file: 156) 03579491 Subfile: TOXBIB-98-422475
HrpW of Erwinia amylovora , a new harpin that contains a domain homologous to pectate lyases of a distinct class. Publication Year: 1998

10/6/62 (Item 62 from file: 155) 09802300 98316710 PMID: 9654138
HrpW of Erwinia amylovora, a new Hrp-secreted protein. May 29 1998

10/6/63 (Item 63 from file: 73) 07338908 EMBASE No: 1998232918
HrpW of Erwinia amylovora, a new Hrp-secreted protein 29 MAY 1998

10/6/64 (Item 64 from file: 5) 11532368 BIOSIS NO.: 199800313700
HrpW of Erwinia amylovora, a new Hrp-secreted protein. 1998

10/6/65 (Item 65 from file: 156) 03565398 Subfile: TOXBIB-98-316710
HrpW of Erwinia amylovora, a new Hrp-secreted protein. Publication Year: 1998

10/6/66 (Item 66 from file: 155) 09331070 97294922 PMID: 9150595
Molecular characterization and expression of the Erwinia carotovora hrpNEcc gene, which encodes an elicitor of the hypersensitive reaction. May 1997

10/6/67 (Item 67 from file: 5) 10943716 BIOSIS NO.: 199799564861
Molecular characterization and expression of the Erwinia carotovora hrpN-Ecc gene, which encodes an elicitor of the hypersensitive reaction. 1997

10/6/68 (Item 68 from file: 156) 03493013 Subfile: TOXBIB-97-294922
Molecular characterization and expression of the Erwinia carotovora hrpNEcc gene, which encodes an elicitor of the hypersensitive reaction. Publication Year: 1997

10/6/69 (Item 69 from file: 155) 08052782 94100578 PMID: 8274770
Nucleotide sequence and properties of the hrmA locus associated with the Pseudomonas syringae pv. syringae 61 hrp gene cluster. Sep-Oct 1993

10/6/70 (Item 70 from file: 5) 09065183 BIOSIS NO.: 199497073553
Nucleotide sequence and properties of the hrmA locus associated with the Pseudomonas syringae pv. syringae 61 hrp gene cluster. 1993

10/6/71 (Item 71 from file: 155) 09544455 97348587 PMID: 9204571
The presence of hrp genes on the pathogenicity-associated plasmid of the tumorigenic bacterium Erwinia herbicola pv. gypsophilae. Jul 1997

10/6/72 (Item 72 from file: 5) 11022480 BIOSIS NO.: 199799643625
The presence of hrp genes on the pathogenicity-associated plasmid of the tumorigenic bacterium Erwinia herbicola pv. gypsophilae. 1997

10/6/73 (Item 73 from file: 155) 09892271 98422476 PMID: 9748456
The Pseudomonas syringae pv. tomato HrpW protein has domains similar to harpins and pectate lyases and can elicit the plant hypersensitive response and bind to pectate. Oct 1998

10/6/74 (Item 74 from file: 73) 07438740 EMBASE No: 1998347127
The Pseudomonas syringae pv. tomato HrpW protein has domains similar to harpins and pectate lyases and can elicit the plant hypersensitive response and bind to pectate 1998

10/6/75 (Item 75 from file: 5 11719540 BIOSIS NO.: 199800501271
The Pseudomonas syringae pv. tomato Hrp W protein has domains similar to harpins and pectate lyases and can elicit the plant hypersensitive response and bind to pectate. 1998

10/6/76 (Item 76 from file: 156) 03579492 Subfile: TOXBIB-98-422476
The Pseudomonas syringae pv. tomato HrpW protein has domains similar to harpins and pectate lyases and can elicit the plant hypersensitive response and bind to pectate. Publication Year: 1998

10/6/77 (Item 77 from file: 15 5) 11062736 20511271 PMID: 11059492
Regulation of hrp genes and type III protein secretion in Erwinia amylovora by HrpX/HrpY, a novel two-component system, and HrpS. Nov 2000

10/6/78 (Item 78 from file: 155) 10986069 20511271 PMID: 11059492
Regulation of hrp genes and type III protein secretion in Erwinia amylovora by HrpX/HrpY, a novel two-component system, and HrpS. Nov 2000

10/6/79 (Item 79 from file: 5) 12814483 BIOSIS NO.: 200100021632
Regulation of hrp genes and type III protein secretion in Erwinia amylovora by HrpX/HrpY, a novel two-component system, and HrpS. 2000

10/6/80 (Item 80 from file: 155) 11141661 21171035 PMID: 11277436
Relative effects on virulence of mutations in the sap, pel, and hrp loci of Erwinia chrysanthemi. Mar 2001

10/6/81 (Item 81 from file: 5) 12944563 BIOSIS NO.: 200100151712
Relative effects on virulence of mutations in the sap, pel, and hrp loci of Erwinia chrysanthemi. 2001

10/6/82 (Item 82 from file: 5) 11840867 BIOSIS NO.: 199900086976
The role of hrp genes in the pathogenicity, detection and identification of some phytopathogenic bacteria. 1998

10/6/83 (Item 83 from file: 5) 11126687 BIOSIS NO.: 199799747832
The type III (Hrp) secretion pathway of plant pathogenic bacteria: Trafficking harpins, avr proteins, and death. 1997

10/6/84 (Item 84 from file: 5) 12218716 BIOSIS NO.: 199900513565
Why do pathogens carry avirulence genes? 1999

10/7/1 (Item 1 from file: 5) DIALOG(R)File 5:Biosis Previews(R) (c) 2001 BIOSIS. All rts. reserv.
09911004 BIOSIS NO.: 199598365922
Altered expression of Erwinia amylovora HRP genes in tobacco leaves pretreated with bacterial protein-lipopolysaccharides.
AUTHOR: Minardi P
AUTHOR ADDRESS: Istituto di Patologia Vegetale, Universita di Bologna, Via Filippo Re 8, 40126 Bologna**Italy
JOURNAL: Journal of Phytopathology (Berlin) 143 (4):p199-205 1995 ISSN: 0931-1785 DOCUMENT TYPE: Article
RECORD TYPE: Abstract LANGUAGE: English SUMMARY LANGUAGE: English; German
ABSTRACT: Infiltration of protein-lipopolysaccharide complexes (prLPS) (250 mu-g/ml) of Pseudomonas syringae pv. aptata into tobacco leaves protected against subsequent elicitation of the hypersensitive response (HR) by Erwinia amylovora . The effect of prLPS on the expression of E. amylovora hrp (hypersensitive response and pathogenicity) genes was tested in protected tobacco leaves and in a defined medium in which hrp genes were highly expressed. Two E. amylovora hrp loci transcriptionally fused with the Escherichia coli beta-glucuronidase (Gus) coding sequence were used as chromosomal reporter genes. The prLPS treatment did not affect hrp gene expression of Hrp - mutants both in planta and in vitro, so the effect of prLPS treatment on hrp gene expression of two E. amylovora Hrp + transformants was assayed during HR development in unprotected tissue and during the same time in prLPS protected tissue. A plasmid containing the same Gus fusions previously located in the chromosome was introduced into a wild-type strain of E. amylovora . Gus activity was significantly lower in protected tissue. We suggest that HR inhibition by prLPS treatment requires the entire hrp gene cluster in order for the bacteria to send a signal to the plant, which, in turn, inhibits the expression of hrp genes.

10/7/15 (Item 15 from file: 5) DIALOG(R)File 5:Biosis Previews(R) (c) 2001 BIOSIS. All rts. reserv.
09939461 BIOSIS NO.: 199598394379
Effect of induced protection of the expression of hrp-genes of Erwinia amylovora in tobacco leaves.
BOOK TITLE: INRA Colloquia; Plant pathogenic bacteria
ORIGINAL LANGUAGE BOOK TITLE: Colloques de l'INRA; Plant pathogenic bacteria.
AUTHOR: Minardi P(a); Beer S V
BOOK AUTHOR/EDITOR: Lemattre M; Freigoun S; Rudolph K; Swings J G: Eds
AUTHOR ADDRESS: (a)Bologna Univ., Inst. Plant Pathol., 40126 Bologna**Italy
JOURNAL: Colloques de l'INRA (66):p545-548 1994
BOOK PUBLISHER: INRA (Institut National de la Recherche Agronomique), 147 rue de l'Universite, 75007 Paris, France
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08420326 95036538 PMID: 7949326
Erwinia chrysanthemi hrp genes and their involvement in soft rot pathogenesis and elicitation of the hypersensitive response.
Bauer DW; Bogdanove AJ; Beer SV; Collmer A
Department of Plant Pathology, Cornell University, Ithaca, NY 14853. Molecular plant-microbe interactions (UNITED STATES) Sep-Oct 1994, 7 (5) p573-81, ISSN 0894-0282 Journal Code: A9P Languages: ENGLISH Document type: Journal Article
Record type: Completed
Unlike the bacterial pathogens that typically cause the hypersensitive response (HR) in plants, Erwinia chrysanthemi has a wide host range, rapidly kills and macerates host tissues, and secretes several isozymes of the macerating enzyme pectate lyase (Pel). PelABCE- and Out- (secretion-deficient) mutants were observed to produce a rapid necrosis in tobacco leaves that was indistinguishable from the HR elicited by the narrow-host-range pathogens E. amylovora Ea321 and Pseudomonas syringae pv. syringae 61. E. amylovora Ea321 hrp genes were used to identify hybridizing cosmids in a cosmid library of E. chrysanthemi EC16 DNA in Escherichia coli. A 16-kb BamHI fragment in one of these cosmids, pCPP2030, hybridized with E. amylovora hrp genes and was mutagenized with Tn10mini-kan. The mutations were introduced into the PelABCE- mutant CUCPB5006 by marker exchange. Two of the resultant hrp ::Tn10mini-kan mutations were found to abolish the ability of CUCPB5006 to cause any necrosis in tobacco leaves unless complemented with pCPP2030. These two mutations were also marker-exchanged into the genome of wild-type strain AC4150. Analysis of DNA sequences flanking the hrp -2::Tn10mini-kan insertion revealed the mutated gene to be similar to a gene in E. amylovora Ea321 hrp complementation group VIII and to P. s. pv. syringae 61 hrpX. Neither of the hrp ::Tn10mini-kan mutations affected the production or secretion of pectic enzymes by AC4150 or CUCPB5006. However the hrp mutations reduced the ability of both AC4150 and CUCPB5006 to incite successful infections in witloof chicory leaves.(ABSTRACT TRUNCATED AT 250 WORDS)

10/7/20 (Item 20 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
08716411 96172740 PMID: 8589405
Erwinia chrysanthemi harpinEch: an elicitor of the hypersensitive response that contributes to soft-rot pathogenesis.
Bauer DW: Wei ZM: Beer SV: Collmer A

Department of Plant Pathology, Cornell University, Ithaca, NY 14853-4203, USA.
Molecular plant-microbe interactions (UNITED STATES) Jul-Aug 1995, 8 (4) p484-91, ISSN 0894-0282 Journal Code: A9P
Languages: ENGLISH Document type: Journal Article Record type: Completed
Mutants of the soft-rot pathogen Erwinia chrysanthemi EC16 that are deficient in the production of the pectate lyase isozymes PelABCE can elicit the hypersensitive response (HR) in tobacco leaves. The hrpNEch gene was identified in a collection of cosmids carrying E. chrysanthemi hrp genes by its hybridization with the Erwinia amylovora hrpNEa gene. hrpNEch appears to be in a monocistronic operon, and it encodes a predicted protein of 340 amino acids that is glycine-rich, lacking in cysteine, and highly similar to HrpNEa in its C-terminal half. Escherichia coli DH5 alpha cells expressing hrpNEch from the lac promoter of pBluescript II accumulated HrpNEch in inclusion bodies. The protein was readily purified from cell lysates carrying these inclusion bodies by solubilization in 4.5 M guanidine-HCl and reprecipitation upon dialysis against dilute buffer. HrpNEch suspensions elicited a typical HR in tobacco leaves, and elicitor activity was heat-stable. Tn5-gusA1 mutations were introduced into the cloned hrpNEch and then marker-exchanged into the genomes of E. chrysanthemi strains AC4150 (wild type), CUCPB5006 (delta pelABCE), and CUCPB5030 (delta pelABCE outD::TnphoA). hrpNEch::Tn5-gusA1 mutations in CUCPB5006 abolished the ability of the bacterium to elicit the HR in tobacco leaves unless complemented with an hrpNEch subclone. An hrpNEch::Tn5-gusA1 mutation also reduced the ability of AC4150 to incite infections in witloof chicory leaves, but it did not reduce the size of lesions that did develop. Purified HrpNEch and E. chrysanthemi strains CUCPB5006 and CUCPB5030 elicited HR -like necrosis in leaves of tomato, pepper, African violet, petunia, and pelargonium, whereas hrpNEch mutants did not.(ABSTRACT TRUNCATED AT 250 WORDS)

10/7/23 (Item 23 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
08869230 96198177 PMID: 8626302
Erwinia amylovora secretes harpin via a type III pathway and contains a homolog of yopN of Yersinia spp.
Bogdanove AJ; Wei ZM; Zhao L; Beer SV
Department of Plant Pathology, Cornell University, Ithaca, New York 14853, USA.
Journal of bacteriology (UNITED STATES) Mar 1996, 178 (6) p1720-30, ISSN 0021-9193 Journal Code: HH3 Languages: ENGLISH Document type: Journal Article Record type: Completed
Type III secretion functions in flagellar biosynthesis and in export of virulence factors from several animal pathogens, and for plant pathogens, it has been shown to be involved in the export of elicitors of the hypersensitive reaction. Typified by the Yop delivery system of Yersinia spp., type III secretion is sec independent and requires multiple components. Sequence analysis of an 11.5-kb region of the hrp gene cluster of Erwinia amylovora containing hrpI, a previously characterized type III gene, revealed a group of eight or more type III genes corresponding to the virB or lcrB (yscN-to-yscU) locus of Yersinia spp. A homolog of another Yop secretion gene, yscD, was found between hrpI and this group downstream. Immediately upstream of hrpI, a homolog of yopN was discovered. yopN is a putative sensor involved in host-cell-contact-triggered expression and transfer of protein, e.g., YopE, to the host cytoplasm. In-frame deletion mutagenesis of one of the type III genes, designated hrcT, was nonpolar and resulted in a Hrp - strain that produced but did not secrete harpin, an elicitor of the hypersensitive reaction that is also required for pathogenesis. Cladistic analysis of the HrpI (herein renamed HrcV) or LcrD protein family revealed two distinct groups for plant pathogens. The Yersinia protein grouped more closely with the plant pathogen homologs than with homologs from other animal pathogens; flagellar biosynthesis proteins grouped distinctly. A possible evolutionary history of type III secretion is presented, and the potential significance of the similarity between the harpin and Yop export systems is discussed, particularly with respect to a potential role for the YopN homolog in pathogenesis of plants.

10/7/27 (Item 27 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
06999713 92193274 PMID: 1372313
Expression of Erwinia amylovora hrp genes in response to environmental stimuli.
Wei ZM; Sneath BJ; Beer SV
Department of Plant Pathology, Cornell University, Ithaca, New York 14853.
Journal of bacteriology (UNITED STATES) Mar 1992, 174 (6) p1875-82, ISSN 0021-9193 Journal Code: HH3
Languages: ENGLISH Document type: Journal Article Record type: Completed
Seven hrp loci that are essential for the hypersensitive reaction elicited by Erwinia amylovora were transcriptionally fused with a derivative of transposon Tn5, containing the promoterless Escherichia coli beta-glucuronidase reporter gene. The seven hrp fusions were used to monitor expression of the hrp loci in vitro and in planta. No significant expression was detected in rich medium for any of the fusions. However, five of them were expressed highly in planta and in inducing medium that contains mannitol, salts, and 5 mM (NH4)2SO4. Expression of these five hrp loci is regulated by ammonium, nicotinic acid, complex-nitrogen sources, certain carbon sources, temperature, and pH. Under well-defined conditions, i.e., in inducing medium, no specific plant components were required for transcriptional activation of the hrp loci. The high levels of expression detected in vitro were comparable to those determined during the development of the hypersensitive reaction in tobacco. Differential levels of expression of the hrp loci occurred in host and nonhost plants. In pear, a host plant, expression of the hrp loci was delayed and greatly reduced compared with expression in tobacco leaves, a nonhost.

10/7/31 (Item 31 from file: 5) DIALOG(R)File 5:Biosis Previews(R) (c) 2001 BIOSIS. All rts. reserv.
07394089 BIOSIS NO.: 000040019748
FUNCTIONAL HOMOLOGY BETWEEN A LOCUS OF ESCHERICHIA-COLI AND THE HRP GENE CLUSTER OF ERWINIA-AMYLOVORA
AUTHOR: WEI Z-M; BEER S V
AUTHOR ADDRESS: DEP. PLANT PATHOLOGY, CORNELL UNIVERSITY, ITHACA, N.Y. 14853.
JOURNAL: 1990 ANNUAL MEETING OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY AND THE CANADIAN PHYTOPATHOLOGICAL SOCIETY, GRAND RAPIDS, MICHIGAN, USA, AUGUST 4-8, 1990. PHYTOPATHOLOGY 80 (10). 1990. 1039. 1990 CODEN: PHYTA DOCUMENT TYPE: Meeting RECORD TYPE: Citation LANGUAGE: ENGLISH

10/7/32 (Item 32 from file: 5) DIALOG(R)File 5:Biosis Previews(R) (c) 2001 BIOSIS. All rts. reserv.
07869824 BIOSIS NO.: 000092129190
FURTHER CHARACTERIZATION OF AN HRP GENE CLUSTER OF ERWINIA- AMYLOVORA
AUTHOR: BAUER D W; BEER S V
AUTHOR ADDRESS: DEP. PLANT PATHOLOGY, 334 PLANT SCIENCE BUILDING, CORNELL UNIVERSITY, ITHACA, NY 14853, USA.
JOURNAL: MOL PLANT-MICROBE INTERACT 4 (5). 1991. 493-499. 1991 FULL JOURNAL NAME: Molecular Plant-Microbe Interactions CODEN: MPMIE RECORD TYPE: Abstract LANGUAGE: ENGLISH
ABSTRACT: Two independent Tn5-induced mutants of Erwinia amylovora , Ea321T102 and Ea322T101, were identified that failed to elicit a hypersensitive response (HR) in a nonhost plant, tobacco. The two also were nonpathogenic on immature pear fruit. Two naturally occurring nonpathogenic strains, P66 and CFPB1376, also were found incapable of eliciting an HR . Three previously reported Tn5-induced nonpathogenic mutants (Steinberger and Beer, Mol. Plant-Microbe Interact. 1:135-144, 1988) were found to elicit a variable HR (Ea321T101 and Ea321T104) or a normal HR (Ea322T104). Two recombinant plasmids and a previously described cosmid containing wild-type E. amylovora DNA restored pathogenicity and the ability to elicit the HR to the seven strains. Restriction mapping and hybridization showed that the cosmid and plasmids overlap; thus, the mutated genes are clustered. Functional analysis of subclones from the two plasmids was used to determine the approximate region of DNA complementing each mutation. These results were combined with some results reported previously and the results of additional tests for complementation. The analysis revealed a cluster of at least six complementation regions involved in pathogenicity of host plants and elicitation of the HR in a nonhost plant.

10/7/37 (Item 37 from file: 5) DIALOG(R)File 5:Biosis Previews(R) (c) 2001 BIOSIS. All rts. reserv.
07006176 BIOSIS NO.: 000038101092
HRP GENES ARE KEY GENES CONTROLLING PLANT PATHOGENICITY AMONG BACTERIA
AUTHOR: ARLAT M; BOUCHER C
AUTHOR ADDRESS: LAB. BIOL. MOL. RELATIONS PLANTE-MICRO-ORGANISME, CNRS-INRA, BP 27, 31326 CASTANET TOLOSAN CEDEX.
JOURNAL: COLLOQUIUM ON NEW HORIZONS FOR CROP PROTECTION: CONTRIBUTIONS OF MOLECULAR BIOLOGY AND GENETIC ENGINEERING, PARIS, FRANCE, MAY 24-25, 1989. C R ACAD AGRIC FR 75 (6). 1989. 73-78. 1989 CODEN: CRAFE RECORD TYPE: Citation LANGUAGE: FRENCH

10/7/38 (Item 38 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
08738721 95349395 PMID: 7623665
The hrp gene locus of Pseudomonas solanacearum, which controls the production of a type III secretion system, encodes eight proteins related to components of the bacterial flagellar biogenesis complex.
Van Gijsegem F; Gough C; Zischek C; Niqueux E; Arlat M; Genin S; Barberis P; German S; Castello P; Boucher C
Laboratoire de Biologie Moleculaire des Relations Plantes Microorganismes, INRA-CNRS, Castanet Tolosan, France.
Molecular microbiology (ENGLAND) Mar 1995, 15 (6) p1095-114, ISSN 0950-382X Journal Code: MOM
Languages: ENGLISH Document type: Journal Article Record type: Completed
Five transcription units of the Pseudomonas solanacearum hrp gene cluster are required for the secretion of the HR -inducing PopA1 protein. The nucleotide sequences of two of these, units 1 and 3, have been reported. Here, we present the nucleotide sequence of the three other transcription units, units 2, 4 and 7, which are together predicted to code for 15 hrp genes. This brings the total number of Hrp proteins encoded by these five transcription units to 20, including HrpB, the positive regulatory protein, and HpaP, which is apparently not required for plant interactions. Among the 18 other proteins, eight belong to protein families regrouping proteins involved in type III secretion pathways in animal and plant bacterial pathogens and in flagellum biogenesis, while two are related solely to proteins involved in secretion systems. For the various proteins found to be related to P. solanacearum Hrp proteins, those in plant-pathogenic bacteria include proteins encoded by hrp genes. For Hrp -related proteins of animal pathogens, those encoded by the spa and mxi genes of Shigella flexneri and of Salmonella typhimurium and by the ysc genes of Yersinia are involved in type III secretion pathways. Proteins involved in flagellum biogenesis, which are related to Hrp proteins of P. solancearum, include proteins encoded by fli and flh genes of S. typhimurium, Bacillus subtilis and Escherichia coli and by mop genes of Erwinia carotovora. P. solanacearum Hrp proteins were also found to be related to proteins of Rhizobium fredii involved in nodulation specificity.

10/7/42 (Item 42 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
09457922 97197534 PMID: 9045830

The hrpA and hrpC operons of Erwinia amylovora encode components of a type III pathway that secretes harpin.
Kim JF; Wei ZM; Beer SV
Department of Plant Pathology, Cornell University, Ithaca, New York 14853, USA.
Journal of bacteriology (UNITED STATES) Mar 1997, 179 (5) p1690-7, ISSN 0021-9193 Journal Code: HH3
Languages: ENGLISH Document type: Journal Article Record type: Completed
A 6.2-kb region of DNA corresponding to complementation groups II and III of the Erwinia amylovora hrp gene cluster was analyzed. Transposon mutagenesis indicated that the two complementation groups are required for secretion of harpin, an elicitor of the hypersensitive reaction. The sequence of the region revealed 10 open reading frames in two putative transcription units: hrpA, hrpB, hrcJ, hrpD, and hrpE in the hrpA operon (group III) and hrpF, hrpG, hrcC, hrpT, and hrpV in the hrpC operon (group II). From promoter regions of the hrpA, hrpC, and hrpN operons, sequences similar to those of the HrpL-dependent promoters of Pseudomonas syringae pathovars were identified with a consensus sequence of 5'-GGAAC-N17-18-CACTNAA-3'. The protein products of seven genes, hrpA, hrcJ, hrpE, hrpF, hrpG, hrcC, and hrpV, were visualized with a T7 polymerase/promoter expression system. HrcC, HrcJ, and HrpT sequences contained potential signal peptides, and HrcC appeared to be envelope associated based on a TnphoA translational fusion. Comparison of deduced amino acid sequences indicated that many of the proteins are homologous to proteins that function in the type III protein secretion pathway. HrcC is a member of the YscC-containing subgroup in the PulD/pIV superfamily of outer membrane proteins. HrcJ is a member of a lipoprotein family that includes YscJ of Yersinia spp., MxiJ of Shigella flexneri, and NolT of Rhizobim fredii. Additional similarities were detected between HrpB and YscI and between HrpE and YscL. HrcJ and HrpE were similar to flagellar biogenesis proteins FliF and FliH, respectively. In addition, HrpA, HrpB, HrcJ, HrpD, HrpE, HrpF, and HrcC showed various degrees of similarity to corresponding proteins of P. syringae. Comparison of hrp clusters with respect to gene organization and similarity of individual proteins confirms that the hrp systems of E. amylovora and P. syringae are closely related to each other and distinct from those of Ralstonia (Pseudomonas) solanacearum and Xanthomonas campestris. Possible implications of extensive similarities between the E. amylovora and P. syringae hrp systems in pathogenesis mechanisms are discussed.

10/7/54 (Item 54 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
07149481 94075235 PMID: 8253684
HrpI of Erwinia amylovora functions in secretion of harpin and is a member of a new protein family.
Wei ZM; Beer SV
Department of Plant Pathology, Cornell University, Ithaca, New York 14853.
Journal of bacteriology (UNITED STATES) Dec 1993, 175 (24) p7958-67, ISSN 0021-9193 Journal Code: HH3
Languages: ENGLISH Document type: Journal Article Record type: Completed
HrpI, a 78-kDa protein, functions in the secretion of harpin, a proteinaceous elicitor of the hypersensitive response from Erwinia amylovora . The predicted amino acid sequence of HrpI is remarkably similar to that of LcrD of Yersinia species, the first member of a recently described protein family. Other proteins of the family are MixA from Shigella flexneri, InvA from Salmonella typhimurium, FlhA from Caulobacter crescentus, HrpI from Pseudomonas syringae pv. syringae, HrpO from Pseudomonas solanacearum, and HrpC2 from Xanthomonas campestris pv. vesicatoria. Cells of E. amylovora containing mutated hrpI genes or cells of Escherichia coli containing the cloned hrp gene cluster with mutated hrpI produce but do not export harpin. When similar cells with functional hrpI genes were grown at 25 degrees C, but not at 37 degrees C, harpin was exported to the culture supernatant. Direct evidence that HrpI is involved in the secretion of a virulence protein has been offered. Two other loci of the hrp gene cluster are involved in the regulation of harpin, and four other loci also are involved in the secretion of harpin. Since harpin and other proteins likely to be secreted by the LcrD family of proteins lack typical signal peptides, their secretion mechanism is distinct from the general protein export pathway.

10/7/66 (Item 66 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
09331070 97294922 PMID: 9150595
Molecular characterization and expression of the Erwinia carotovora hrpNEcc gene, which encodes an elicitor of the hypersensitive reaction.
Mukherjee A; Cui Y; Liu Y; Chatterjee AK
Department of Plant Pathology, University of Missouri, Columbia 65211, USA.
Molecular plant-microbe interactions (UNITED STATES) May 1997, 10 (4) p462-71, ISSN 0894-0282 Journal Code: A9P
Languages: ENGLISH Document type: Journal Article Record type: Completed
The nucleotide sequence of hrpNEcc DNA, cloned from Erwinia carotovora subsp. carotovora strain Ecc71, reveals a coding region of 1,068 bp which matches the size of hrpNEcc transcripts. hrpNEcc is predicted to encode a glycine-rich protein of approximately 36 kDa. Like the elicitors of the hypersensitive reaction (HR) produced by E. chrysanthemi (HarpinEch) and E. amylovora (HarpinEa), the deduced 36-kDa protein does not possess a typical signal sequence, but it contains a putative membrane-spanning domain. In Escherichia coli strains overexpressing hrpNEcc, the 36-kDa protein has been identified as the hrpNEcc product by Western blot analysis using anti-HarpinEch antibodies. The 36-kDa protein fractionated from E. coli elicits the HR in tobacco leaves. Moreover, a HrpN- and RsmA- double mutant (RsmA = regulator of secondary metabolites) does not produce this 36-kDa protein or elicit the HR , although this strain, like the RsmA- and HrpN+ bacteria, overproduces extracellular enzymes and macerates celery petioles. These observations demonstrate that hrpNEcc encodes the elicitor of the HR , designated HarpinEcc. The levels of hrpNEcc transcripts are affected in both RsmA+ and RsmA- strains by media composition and carbon sources, although the mRNA levels are substantially higher in the RsmA- strains. The expression of hrpNEcc in Ecc71 is cell density dependent and is activated by the quorum-sensing signal, N-(3-oxohexanoyl)-L-homoserine lactone (OHL). By contrast, hrpNEcc expression in an RsmA- strain is independent of cell density, and substantial expression occurs in the absence of OHL. The effects of cultural conditions and the occurrence of putative cis-acting sequences, such as consensus sigma 54 promoters and an hrp promoter upstream of the transcriptional start site, indicate that the production of HarpinEcc in wild-type RsmA+ E. carotovora subsp. carotovora is tightly regulated. These observations, taken along with the finding that the HR is caused by RsmA- mutants but not by RsmA+ strains (Cui et al., 1996, Mol. Plant-Microbe Interact. 9:565-573), strongly support the idea that the inability of the wild-type pectolytic E. carotovora subsp. carotovora to elicit the HR is due to the lack of a significant level of HarpinEcc production.

10/7/69 (Item 69 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
08052782 94100578 PMID: 8274770
Nucleotide sequence and properties of the hrmA locus associated with the Pseudomonas syringae pv. syringae 61 hrp gene cluster.
Heu S; Hutcheson SW
Department of Botany, University of Maryland, College Park 20742.
Molecular plant-microbe interactions (UNITED STATES) Sep-Oct 1993, 6 (5) p553-64, ISSN 0894-0282 Journal Code: A9P
Languages: ENGLISH Document type: Journal Article Record type: Completed
The hrmA locus, isolated from Pseudomonas syringae pv. syringae 61, is essential for phenotypic expression of the P. s. pv. syringae 61 hrp cluster in Escherichia coli strains and enables bacteria carrying the hrp /hrm gene cluster to elicit the hypersensitive response (HR) associated with plant disease resistance. The phenotype of P. s. pv syringae 61 hrmA mutants (pathogenicity+, delayed HR) was distinct from that of hrp mutants. The locus was localized to a 3.6-kb BamH1-EcoR1 fragment whose nucleotide sequence was determined. A single open reading frame was identified that encodes for a 41,457-Da protein of unknown biochemical function. Production of the deduced protein product was confirmed by using T7 RNA polymerase-direc[redacted] expression of the locus and N-terminal sequence analysis of the isolated HrmA. The deduced protein product did not exhibit homology with any of the characterized avr genes or the hrpN product of Erwinia amylovora . Transcription was shown to initiate 37 nucleotides upstream of the translational start from an apparent sigma 70 promoter. Two hrp genes were shown to act as positive transcriptional factors for hrmA expression. Expression of hrmA in P. syringae pv. glycinea race 4 did not exhibit the phenotypic properties of an avr gene or HrpN, but suggested that this locus may serve a regulatory function. A homolog to hrmA was present in strains of only three of the 23 P. syringae pathovars tested.

10/7/71 (Item 71 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
09544455 97348587 PMID: 9204571
The presence of hrp genes on the pathogenicity-associated plasmid of the tumorigenic bacterium Erwinia herbicola pv. gypsophilae.
Nizan R; Barash I; Valinsky L; Lichter A; Manulis S
Department of Plant Sciences, Tel-Aviv University, Israel.
Molecular plant-microbe interactions (UNITED STATES) Jul 1997, 10 (5) p677-82, ISSN 0894-0282 Journal Code: A9P
Languages: ENGLISH Document type: Journal Article Record type: Completed
The pathogenicity-associated plasmid (pPATH) of Erwinia herbicola pv. gypsophilae (Ehg), which is present only in pathogenic strains, contains a gene cluster encoding indole-3-acetic acid and cytokinin biosynthesis. The transposon-reporter Tn3-Spice was used to generate nonpathogenic mutants on two overlapping cosmids, pLA150 and pLA352, of the pPATH. A cluster of such mutations, which spanned 16 kb, mapped approximately 15 kb from the gene cluster involved in phytohormone biosynthesis. Non-pathogenic mutants also failed to elicit the hypersensitive reaction (HR) on tobacco. Pathogenicity and HR were restored concomitantly to these mutants by in trans complementation with wild-type Ehg DNA. A 3.8-kb HindIII DNA fragment that complemented the hrp mutants was sequenced and six complete and two partial open reading frames (ORFs) were identified. Comparison of the deduced amino acid sequences of the eight ORFs showed striking homology and co-linearity with hrp genes of E. amylovora as well as with other plant and mammalian pathogenic bacterial genes encoding proteins of the type III secretion system. Limited DNA sequencing at various sites on the remaining 11-kb region of pLA352 also showed high identity to Hrp proteins of E. amylovora , E. stewartii, and Pseudomonas syringae. These results suggest that hrp genes are mandatory for gall formation by E. herbicola pv. gypsophilae.

10/7/83 (Item 83 from file: 5) DIALOG(R)File 5:Biosis Previews(R) (c) 2001 BIOSIS. All rts. reserv.
11126687 BIOSIS NO.: 199799747832
The type III (Hrp) secretion pathway of plant pathogenic bacteria: Trafficking harpins, avr proteins, and death.
AUTHOR: Alfano James R; Collmer Alan(a)
AUTHOR ADDRESS: (a)Dep. Plant Pathol., Cornell Univ., Ithaca, NY 14853-4203 **USA
JOURNAL: Journal of Bacteriology 179 (18):p5655-5662 1997 ISSN: 0021-9193 RECORD TYPE: Citation LANGUAGE: English

13/6/1 (Item 1 from file: 155) 11236399 21230246 PMID: 11332727
Genetic mapping and functional analysis of the tomato Bs4 locus governing recognition of the Xanthomonas campestris pv. vesicatoria AvrBs4 protein. May 2001

13/6/2 (Item 2 from file: 155) 11196824 21071241 PMID: 11204787

Immunogold labeling of Hrp pili of Pseudomonas syringae pv. Tomato assembled in minimal medium and in planta. Feb 2001

13/6/3 (Item 3 from file: 155) 11196658 21065167 PMID: 11134504
HrpZ(Psph) from the plant pathogen Pseudomonas syringae pv. Phaseolicola binds to lipid bilayers and forms an ion-conducting pore in vitro. Jan 2 2001

13/6/4 (Item 4 from file: 155) 11000089 21034636 PMID: 11194877
Cloning and characterization of a bean UDP-glucosyltransferase cDNA expressed during plant-bacterial interactions. Jan 2001

13/6/5 (Item 5 from file: 155) 10947191 20566798 PMID: 11115117
HrpB2 and HrpF from Xanthomonas are type III-secreted proteins and essential for pathogenicity and recognition by the host plant. Nov 2000

13/6/6 (Item 6 from file: 155) 10902521 20427388 PMID: 10975648
Resistance of tomato and pepper to T3 strains of Xanthomonas campestris pv. vesicatoria is specified by a plant-inducible avirulence gene. Sep 2000

13/6/7 (Item 7 from file: 155) 10900184 20471859 PMID: 11018143
Assembly and function of type III secretory systems. 2000

13/6/8 (Item 8 from file: 155) 10755732 98453137 PMID: 9781876
hpaA mutants of Xanthomonas campestris pv. vesicatoria are affected in pathogenicity but retain the ability to induce host-specific hypersensitive reaction. Sep 1998

13/6/9 (Item 9 from file: 155) 10710701 20381287 PMID: 10922033
Pseudomonas syringae Hrp type III secretion system and effector proteins. Aug 1 2000

13/6/10 (Item 10 from file: 155) 10686490 20253307 PMID: 10792715
Two novel proteins, PopB, which has functional nuclear localization signals, and PopC, which has a large leucine-rich repeat domain, are secreted through the hrp-secretion apparatus of Ralstonia solanacearum. Apr 2000

13/6/11 (Item 11 from file: 155) 10640956 20312816 PMID: 10852884
The alternative sigma factor RpoN is required for hrp activity in Pseudomonas syringae pv. maculicola and acts at the level of hrpL transcription. Jun 2000

13/6/12 (Item 12 from file: 155) 10640955 20312815 PMID: 10852883
Virulence of the phytopathogen Pseudomonas syringae pv. maculicola is rpoN dependent. Jun 2000

13/6/13 (Item 13 from file: 155) 10571135 20172330 PMID: 10707351
The hrpB and hrpG regulatory genes of Ralstonia solanacearum are required for different stages of the tomato root infection process. Mar 2000

13/6/14 (Item 14 from file: 155) 10542727 20179797 PMID: 10714988
Identification of two novel hrp-associated genes in the hrp gene cluster of Xanthomonas oryzae pv. oryzae. Apr 2000

13/6/15 (Item 15 from file: 155) 10423104 20058158 PMID: 10590653
[The metabolic-chronotropic relation in patients with heart failure—a correlation with functional capacity] Relacao metabolica-cronotropica em doentes com insuficiencia cardiaca--correlacao com a capacidade funcional. Oct 1999

13/6/16 (Item 16 from file: 155) 10281676 99415952 PMID: 10485919
Identification of a pathogenicity island, which contains genes for virulence and avirulence, on a large native plasmid in the bean pathogen Pseudomonas syringae pathovar phaseolicola. Sep 14 1999

13/6/17 (Item 17 from file: 155) 10276302 99407919 PMID: 10478481
An hrcU-homologous gene mutant of Xanthomonas campestris pv. glycines 8ra that lost pathogenicity on the host plant but was able to elicit the hypersensitive response on nonhosts. Jul 1999

13/6/18 (Item 18 from file: 155) 10228295 99361202 PMID: 10432637
A bean cDNA expressed during a hypersensitive reaction encodes a putative calcium-binding protein. Aug 1999

13/6/19 (Item 19 from file: 155) 10063694 99168220 PMID: 10069066
Plants expressing the Pto disease resistance gene confer resistance to recombinant PVX containing the avirulence gene AvrPto. Jan 1999

13/6/20 (Item 20 from file: 155) 09922196 98367133 PMID: 9701811
Sequence variations in alleles of the avirulence gene avrPphE.R2 from Pseudomonas syringae pv. phaseolicola lead to loss of recognition of the AvrPphE protein within bean cells and a gain in cultivar-specific virulence. Jul 1998

13/6/21 (Item 21 from file: 155) 09650971 98108967 PMID: 9447661
Hrp-controlled interkingdom protein transport: learning from flagellar assembly? Dec 1997

13/6/22 (Item 22 from file: 155) 09544451 97348579 PMID: 9204563
Evidence that the Pseudomonas syringae pv. syringae hrp-linked hrmA gene encodes an Avr-like protein that acts in an hrp-dependent manner within tobacco cells. Jul 1997

13/6/23 (Item 23 from file: 155) 09460300 97234636 PMID: 9079910
Multiple loci of Pseudomonas syringae pv. syringae are involved in pathogenicity on bean: restoration of one lesion-deficient mutant requires two tRNA genes. Apr 1997

13/6/24 (Item 24 from file: 155) 09344824 97334104 PMID: 9190801
Altered localization of HrpZ in Pseudomonas syringae pv. syringae hrp mutants suggests that different components of the type III secretion pathway control protein translocation across the inner and outer membranes of gram-negative bacteria. Jun 1997

13/6/25 (Item 25 from file: 155) 09331072 97294924 PMID: 9150597
hrpf of Xanthomonas campestris pv. vesicatoria encodes an 87-kDa protein with homology to NolX of Rhizobium fredii. May 1997

13/6/26 (Item 26 from file: 155) 09295410 97250560 PMID: 9096416
Hrp pilus: an hrp-dependent bacterial surface appendage produced by Pseudomonas syringae pv. tomato DC3000. Apr 1 1997

13/6/27 (Item 27 from file: 155 09287541 97210201 PMID: 9057331
Expression of avrPphB, an avirulence gene from Pseudomonas syringae pv. phaseolicola, and the delivery of signals causing the hypersensitive reaction in bean. Mar 1997

13/6/28 (Item 28 from file: 155) 09109829 97134676 PMID: 8980236
Recognition of the bacterial avirulence protein AvrBs3 occurs inside the host plant cell. Dec 27 1996

13/6/29 (Item 29 from file: 155) 09049616 96417851 PMID: 8820642
Analysis of the role of the Pseudomonas syringae pv. syringae HrpZ harpin in elicitation of the hypersensitive response in tobacco using functionally non-polar hrpZ deletion mutations, truncated HrpZ fragments, and hrmA mutations. Feb 1996

13/6/30 (Item 30 from file: 155) 08959722 96305752 PMID: 8768370
Expression of the Pseudomonas syringae avirulence protein AvrB in plant cells alleviates its dependence on the hypersensitive response and pathogenicity (Hrp) secretion system in eliciting genotype-specific hypersensitive cell death. Jul 1996

13/6/31 (Item 31 from file: 155) 08852159 96212995 PMID: 8634477
Phenotypic expression of Pseudomonas syringae avr genes in E. coli is linked to the activities of the hrp-encoded secretion system. May 1996

13/6/32 (Item 32 from file: 155) 08828146 96165260 PMID: 8576039
Expression and localization of HrpA1, a protein of Xanthomonas campestris pv. vesicatoria essential for pathogenicity and induction of the hypersensitive reaction. Feb 1996

13/6/33 (Item 33 from file: 155) 08800042 96025090 PMID: 7579617
The complete hrp gene cluster of Pseudomonas syringae pv. syringae 61 includes two blocks of genes required for harpinPss secretion that are arranged colinearly with Yersinia ysc homologs. Sep-Oct 1995

13/6/34 (Item 34 from file: 155) 08795628 95289705 PMID: 7771767
Cloning of genes required for hypersensitivity and pathogenicity in Pseudomonas syringae pv. aptata. 1995

13/6/35 (Item 35 from file: 155) 08638703 96025089 PMID: 7579616
The HrpZ proteins of Pseudomonas syringae pvs. syringae, glycinea, and tomato are encoded by an operon containing Yersinia ysc homologs and elicit the hypersensitive response in tomato but not soybean. Sep-Oct 1995

13/6/36 (Item 36 from file: 155) 08596005 95383714 PMID: 7655064
The avrRpm1 gene of Pseudomonas syringae pv. maculicola is required for virulence on Arabidopsis. May-Jun 1995

13/6/37 (Item 37 from file: 155) 08527548 95290716 PMID: 7772803
Characterization of avrE from Pseudomonas syringae pv. tomato: a hrp -linked avirulence locus consisting of at least two transcriptional units. Jan-Feb 1995

13/6/38 (Item 38 from file: 155) 08416875 94355679 PMID: 8075421
Characterization of the hrpJ and hrpU operons of Pseudomonas syringae pv. syringae Pss61: similarity with components of enteric bacteria involved in flagellar biogenesis and demonstration of their role in HarpinPss secretion. Jul-Aug 1994

13/6/39 (Item 39 from file: 155) 08353217 95178735 PMID: 7873779
Characterization of avrPphE, a gene for cultivar-specific avirulence from Pseudomonas syringae pv. phaseolicola which is physically linked to rpY, a new hrp gene identified in the halo-blight bacterium. Nov-Dec 1994

13/6/40 (Item 40 from file: 155) 08180133 94282090 PMID: 8012404
hsr203J, a tobacco gene whose activation is rapid, highly localized and specific for incompatible plant/pathogen interactions. Apr 1994

13/6/41 (Item 41 from file: 155) 08144057 94246085 PMID: 8188982
Central cardiovascular effects of AVP and ANP in normotensive and spontaneously hypertensive rats. Apr 1994

13/6/42 (Item 42 from file: 155) 08114155 94148760 PMID: 8106313

Identification of a putative alternate sigma factor and characterization of a multicomponent regulatory cascade controlling the expression of Pseudomonas syringae pv. syringae Pss61 hrp and hrmA genes. Feb 1994

13/6/43 (Item 43 from file: 155) 08113957 94148001 PMID: 8313899
PopA1, a protein which induces a hypersensitivity-like response on specific Petunia genotypes, is secreted via the Hrp pathway of Pseudomonas solanacearum Feb 1 1994

13/6/44 (Item 44 from file: 155) 08093790 93302711 PMID: 8316211
Homology between the HrpO protein of Pseudomonas solanacearum and bacterial proteins implicated in a signal peptide-independent secretion mechanism. Jun 1993

13/6/45 (Item 45 from file: 155) 08042439 93359711 PMID: 8354877
Secretion of chondroitin sulfate from embryonic epidermal cells in Xenopus laevis. Sep 1993

13/6/46 (Item 46 from file: 155) 08012991 94113738 PMID: 7904440
DNA sequence variation and phylogenetic relationships among strains of Pseudomonas syringae pv. syringae inferred from restriction site maps and restriction fragment length polymorphism. Dec 1993

13/6/47 (Item 47 from file: 155) 08000908 93107655 PMID: 8093255
Phenobarbital-induced hepatocellular proliferation: anti-bromodeoxyuridin e and anti-proliferating cell nuclear antigen immunocytochemistry. Jan 1993

13/6/48 (Item 48 from file: 155) 07809248 93015750 PMID: 1400238
The Pseudomonas syringae pv. syringae 61 hrpH product, an envelope protein required for elicitation of the hypersensitive response in plants. Nov 1992

13/6/49 (Item 49 from file: 155) 07801452 92276327 PMID: 1592805
Plant and environmental sensory signals control the expression of hrp genes in Pseudomonas syringae pv. phaseolicola. Jun 1992

13/6/50 (Item 50 from file: 155) 07746115 92041611 PMID: 1938914
Expression of the avirulence gene avrBs3 from Xanthomonas campestris pv. vesicatoria is not under the control of hrp genes and is independent of plant factors. Nov 1991

13/6/51 (Item 51 from file: 155) 07703092 92193257 PMID: 1312527
Phenotypic expression of the Pseudomonas syringae pv. syringae 61 hrp /hrm gene cluster in Escherichia coli MC4100 requires a functional porin. Mar 1992

13/6/52 (Item 52 from file: 155) 07674262 93113007 PMID: 1472717
Determinants of pathogenicity in Xanthomonas campestris pv. Vesicatoria are related to proteins involved in secretion in bacterial pathogens of animals. Sep-Oct 1992

13/6/53 (Item 53 from file: 155) 07580477 92193256 PMID: 1548225
Organization and environmental regulation of the Pseudomonas syringae pv. syringae 61 hrp cluster. Mar 1992

13/6/54 (Item 54 from file: 155) 07182957 93091288 PMID: 1457844
Continuous measurement of blood volume during hemodialysis by an optical method. Jul-Sep 1992

13/6/55 (Item 55 from file: 155) 07144217 93388514 PMID: 8376331
The opsX locus of Xanthomonas campestris affects host range and biosynthesis of lipopolysaccharide and extracellular polysaccharide. Sep 1993

13/6/56 (Item 56 from file: 155) 07053932 93313957 PMID: 8324821
Pseudomonas syringae pv. syringae harpinPss: a protein that is secreted via the Hrp pathway and elicits the hypersensitive response in plants.Jul 2 1993

13/6/57 (Item 57 from file: 155) 06997966 92208318 PMID: 1666525
Xanthomonas campestris contains a cluster of hrp genes related to the larger hrp cluster of Pseudomonas solanacearum. Nov-Dec 1991

13/6/58 (Item 58 from file: 155) 06991253 91100345 PMID: 1846144
Genetic and transcriptional organization of the hrp cluster of Pseudomonas syringae pv. phaseolicola. Jan 1991

13/6/59 (Item 59 from file: 155) 06986926 90368573 PMID: 2168373
A plant-inducible gene of Xanthomonas campestris pv. campestris encodes an exocellular component required for growth in the host and hypersensitivity on nonhosts. Sep 1990

13/6/60 (Item 60 from file: 155) 06976314 93125128 PMID: 1479894
Evidence that the hrpB gene encodes a positive regulator of pathogenicity genes from Pseudomonas solanacearum. Oct 1992

13/6/61 (Item 61 from file: 155) 06967393 92121119 PMID: 1370664
Expression of the Xanthomonas campestris pv. vesicatoria hrp gene cluster, which determines pathogenicity and hypersensitivity on pepper and tomato, is plant inducible. Feb 1992

13/6/62 (Item 62 from file: 155) 06588604 89257624 PMID: 2723749
Time course of structural changes at identified sensory neuron synapses during long-term sensitization in Aplysia. May 1989

13/6/63 (Item 63 from file: 155) 05963368 88058776 PMID: 2824440
Pseudomonas solanacearum ge nes controlling both pathogenicity on tomato and hypersensitivity on tobacco are clustered. Dec 1987

13/6/64 (Item 64 from file: 155) 05894145 87111743 PMID: 3100730
In vitro neuronal differentiation of Drosophila embryo cells. Jan 1987

13/6/65 (Item 65 from file: 155) 05744449 86198874 PMID: 3009731
Purification of a human red blood cell protein supporting the survival of cultured CNS neurons, and its identification as catalase. Apr 1986

13/6/66 (Item 66 from file: 155) 05665184 89129685 PMID: 3146785
Gas exchange and metabolic transients in heart transplant recipients. Dec 1988

13/6/67 (Item 67 from file: 155) 05474544 89199058 PMID: 2539441
Auditory brain stem of the ferret: some effects of rearing with a unilateral ear plug on the cochlea, cochlear nucleus, and projections to the inferior colliculus. Apr 1989

13/6/68 (Item 68 from file: 155) 05313668 89388246 PMID: 2781284
Bacterial blight of soybean: regulation of a pathogen gene determining host cultivar specificity. Sep 22 1989

13/6/69 (Item 69 from file: 155) 05301829 89359144 PMID: 2768197
The predicted protein product of a pathogenicity locus from Pseudomonas syringae pv. phaseolicola is homologous to a highly conserved domain of several procaryotic regulatory proteins. Sep 1989

13/6/70 (Item 70 from file: 155) 05258592 90166475 PMID: 3272153
Cellular determination in the Xenopus retina is independent of lineage and birth date. Mar 1988

13/6/71 (Item 71 from file: 155) 05087862 87310608 PMID: 3625266
Morphological changes in leech Retzius neurons after target contact during embryogenesis. Sep 1987

13/6/72 (Item 72 from file: 155) 03867510 84281776 PMID: 6466992
Electrophysiological and morphological measurements in cat gastrocnemius and soleus alpha-motoneurones. Jul 30 1984

13/6/73 (Item 73 from file: 155) 03639269 82118404 PMID: 7327509
[Response of omental milk spots to colloidal saccharated ferric oxide in the mouse: light and electron microscopic study (author's transl)] Mar 1981

13/6/74 (Item 1 from file: 73) 11147117 EMBASE No: 2001163066
Identification and expression of the Pseudomonas syringae pv. Aptata hrpZSUBPsa gene which encodes an harpin elicitor 2001

13/6/75 (Item 2 from file: 73) 10991035 EMBASE No: 2001036267
HrpZSUBPsph from the plant pathogen Pseudomonas syringae pv. Phaseolicola binds to lipid bilayers and forms an ion-conducting pore in vitro 02 JAN 2001

13/6/76 (Item 3 from file: 73) 07855270 EMBASE No: 1999328594
Identification of a pathogenicity island, which contains genes for virulence and avirulence, on a large native plasmid in the bean pathoven Pseudomonas syringae pathovar phaseolicola 1999

13/6/77 (Item 4 from file: 73) 07122203 EMBASE No: 1998013025
Hrp-controlled interkingdom protein transport: Learning from flagellar assembly? 1997

13/6/78 (Item 5 from file: 73) 06389242 EMBASE No: 1996053061
Expression and localization of HrpA1, a protein of Xanthomonas campestris pv. vesicatoria essential for pathogenicity and induction of the hypersensitive reaction 1996

13/6/79 (Item 6 from file: 73) 05433056 EMBASE No: 1993201155
Pseudomonas syringae pv. syringae Harpin(Pss): A protein that is secreted via the Hrp pathway and elicits the hypersensitive response in plants 1993

13/6/80 (Item 7 from file: 73) 04377368 EMBASE No: 1990265452
Postmortem HRP tracing in perfusion fixed developing CNS of the rat 1989

13/6/81 (Item 8 from file: 73) 01305675 EMBASE No: 1979026270
Cellular responses to surface binding and internalization of concanavalin A. An electron microscopic investigation on the problem of membrane cycling 1978

13/6/82 (Item 9 from file: 73) 01139091 EMBASE No: 1978269648
Efferents and centrifugal afferents of the main and accessory olfactory bulbs in the hamster 1978

13/6/83 (Item 10 from file: 73) 00923523 EMBASE No: 1978051766

Two classes of microvesicles in the neurohypophysis 1977

13/6/84 (Item 1 from file: 5) 12979467 BIOSIS NO.: 200100186616
Genetics of phytopathogenic bacteria. BOOK TITLE: Progress in Botany 2001

13/6/85 (Item 2 from file: 5) 12914286 BIOSIS NO.: 200100121435
The difference between corticospinal neurons in the second and fifth somatosensory areas of the cortex. 2000

13/6/86 (Item 3 from file: 5) 12883678 BIOSIS NO.: 200100090827
Kinetics of cell proliferation in a vertebrate retina, Xenopus laevis. 2000

13/6/87 (Item 4 from file: 5) 12716075 BIOSIS NO.: 200000469577
The effect of nitrogen on disease development and gene expression in bacterial and fungal plant pathogens. 2000

13/6/88 (Item 5 from file: 5) 12672213 BIOSIS NO.: 200000425715
Aggressiveness of French isolates of Ralstonia solanacearum and their potential use in biocontrol. 1998

13/6/89 (Item 6 from file: 5) 12672208 BIOSIS NO.: 200000425710
Pathogenicity of Ralstonia solanacearum depends on hrp genes which govern the secretion of proteins mediating host/bacteria interactions. 1998

13/6/90 (Item 7 from file: 5) 12553594 BIOSIS NO.: 200000307096
Functional analysis of the conserved effector locus in the Hrp pathogenicity island of Pseudomonas syringae pv. tomato DC3000. 2000

13/6/91 (Item 8 from file: 5) 12400824 BIOSIS NO.: 200000154326
The gene coding for the Hrp pilus structural protein is required for type III secretion of Hrp and Avr proteins in Pseudomonas syringae pv. tomato. 2000

13/6/92 (Item 9 from file: 5) 12235887 BIOSIS NO.: 199900530736
Chromosomal gene transfer by conjugation in the plant pathogen Xanthomonas axonopodis pv. vesicatoria. 1999

13/6/93 (Item 10 from file: 5) 12218717 BIOSIS NO.: 199900513566
Effect of heat and cycloheximide treatment of tobacco on the ability of Pseudomonas syringae pv. syringae 61 hrp/hrmA mutants to cause HR. 1999

13/6/94 (Item 11 from file: 5) 12114929 BIOSIS NO.: 199900409778
Isolation of hrp cluster from Xanthomonas campestris pv. citri and its application for RFLP analyses of xanthomonads. 1999

13/6/95 (Item 12 from file: 5) 12101977 BIOSIS NO.: 199900396826
Isolation and characterization of Pseudomonas syringae subsp. Savastanoi mutants defective in hypersensitive response elicitation and pathogenicity. 1999

13/6/96 (Item 13 from file: 5) 12101613 BIOSIS NO.: 199900396462
HarpinPSS-induced peroxidase and lignin accumulation in tobacco during the hypersensitive response. 1999

13/6/97 (Item 14 from file: 5) 11852064 BIOSIS NO.: 199900098173
Inhibition of harpinPss-mediated hypersensitive response in tobacco and petunia by AP1, an amphipathic protein isolated from tomato leaves. 1998

13/6/98 (Item 15 from file: 5) 11781843 BIOSIS NO.: 199900027952
Localized changes in peroxidase activity accompany hydrogen peroxide generation during the development of a nonhost hypersensitive reaction in lettuce. 1998

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The role of hrp genes during plant-bacterial interactions. BOOK TITLE: Annual Review of Phytopathology 1997

13/6/100 (Item 17 from file: 5) 11007214 BIOSIS NO.: 199799628359
HopPtoA, a Pseudomonas syringae pv. tomato Hrp-secreted protein with homology to pectate lyases. 1997

13/6/101 (Item 18 from file: 5) 10943717 BIOSIS NO.: 199799564862
HrpF of Xanthomonas campestris pv. vesicatoria encodes an 87-kDa protein with homology to NolX of Rhizobium fredii. 1997

13/6/102 (Item 19 from file: 5) 10881432 BIOSIS NO.: 199799502577
Multiple loci of Pseudomonas syringae pv. syringae are involved in pathogenicity of bean: Restoration of one lesion-deficient mutant requires two tRNA genes. 1997

13/6/103 (Item 20 from file: 5) 10754982 BIOSIS NO.: 199799376127
Cellular communication and signal transduction in higher plants. 1996

13/6/104 (Item 21 from file: 5) 10704093 BIOSIS NO.: 199799325238
Elicitation of plant hypersensitive response by bacteria. 1996

13/6/105 (Item 22 from file: 5) 10674762 BIOSIS NO.: 199799295907
Bacterial pathogens in plants: Life up against the wall. 1996

13/6/106 (Item 23 from file: 5) 10643771 BIOSIS NO.: 199699264916
HrpG, a key hrp regulatory protein of Xanthomonas campestris pv. vesicatoria is homologous to two-component response regulators. 1996

13/6/107 (Item 24 from file: 5) 10600902 BIOSIS NO.: 199699222047
Effect of heat treatment of plant on the interaction between tobacco leaves and hrp mutants of Pseudomonas syringae pv. syringae. 1996

13/6/108 (Item 25 from file: 5) 10588728 BIOSIS NO.: 199699209873
Bacterial avirulence genes. BOOK TITLE: Annual Review of Phytopathology 1996

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Induction of systemic acquired resistance in cucumber by Pseudomonas syringae pv. syringae 61 HrpZ-Pss protein. 1996

13/6/110 (Item 27 from file: 5) 10326929 BIOSIS NO.: 199698781847
The active oxygen response of cell suspensions to incompatible bacteria is not sufficient to cause hypersensitive cell death. 1996

13/6/111 (Item 28 from file: 5) 10292820 BIOSIS NO.: 199698747738
Development of corticospinal tract fibers and their plasticity I: Quantitative analysis of the developing corticospinal tract in mice. 1996

13/6/112 (Item 29 from file: 5) 10193853 BIOSIS NO.: 199698648771
Hrp genes in Xanthomonas campestris pv. vesicatoria determine ability to suppress papilla deposition in pepper mesophyll cells. 1995

13/6/113 (Item 30 from file: 5) 10003534 BIOSIS NO.: 199598458452
Detection of Xanthomonas campestris pv. vesicatoria associated with pepper and tomato seed by DNA amplification. 1995

13/6/114 (Item 31 from file: 5) 09939485 BIOSIS NO.: 199598394403
Possible functions for Pseudomonas solanacearum hrp genes and conservation among gram negative phytopathogenic bacteria. BOOK TITLE: INRA Colloquia; Plant pathogenic bacteria ORIGINAL LANGUAGE BOOK TITLE: Colloques de l'INRA; Plant pathogenic bacteria. 1994

13/6/115 (Item 32 from file: 5) 09927706 BIOSIS NO.: 199598382624
Hrp mutant of Pseudomonas syringae pv phaseolicola induces cell wall alterations but not membrane damage leading to the hypersensitive reaction in lettuce. 1995

13/6/116 (Item 33 from file: 5) 09879928 BIOSIS NO.: 199598334846
Microscopy of the interaction of hrp mutants of Pseudomonas syringae pv. phaseolicola with a nonhost plant. 1995

13/6/117 (Item 34 from file: 5) 09666514 BIOSIS NO.: 199598121432
Organization of the hrp gene cluster and nucleotide sequence of the hrpL gene from Pseudomonas syringae pv. morsprunorum. 1995

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Function of oxidative cross-linking of cell wall structural proteins in plant disease resistance. 1994

13/6/119 (Item 36 from file: 5) 09426122 BIOSIS NO.: 199497434492
Genes governing the secretion of factors involved in host-bacteria interactions are conserved among animal and plant pathogenic bacteria. BOOK TITLE: Developments in Plant Pathology; Molecular mechanisms of bacterial virulence 1994

13/6/120 (Item 37 from file: 5) 08857932 BIOSIS NO.: 199396009433
Phosphoinositide breakdown during the potassium ion/hydrogen ion positive exchange response of tobacco to Pseudomonas syringae pv. syringae. 1993

13/6/121 (Item 38 from file: 5) 08812068 BIOSIS NO.: 199395101419
Generalized induction of defense responses in bean is not correlated with the induction of the hypersensitive reaction. 1993

13/6/122 (Item 39 from file: 5) 08654295 BIOSIS NO.: 199345072370
Involvement of Pseudomonas solanacearum hrp genes on the secretion of a bacterial compound which induces a hypersensitive-like response on tobacco. BOOK TITLE: Current Plant Science and Biotechnology in Agriculture; Advances in molecular genetics of plant-microbe interactions, Vol 2 1993

13/6/123 (Item 40 from file: 5) 08434291 BIOSIS NO.: 000043119120
MOLECULAR GENETICS OF PATHOGENICITY DETERMINANTS OF PSEUDOMONAS-SOLANACEARUM WITH SPECIAL EMPHASIS ON HRP GENES 1992

13/6/124 (Item 41 from file: 5) 08310525 BIOSIS NO.: 000094072848
DNA PEROXIDASE PROBING OF SOME PLANT AND ANIMAL VIRUS INFECTIONS 1992

13/6/125 (Item 42 from file: 5) 08186037 BIOSIS NO.: 000094009810
INCOMPATIBLE INTERACTIONS BETWEEN CRUCIFERS AND XANTHOMONAS-CAMPESTRIS INVOLVE A VASCULAR HYPERSENSITIVE RESPONSE ROLE OF THE HRPX LOCUS 1992

13/6/126 (Item 43 from file: 5) 08093905 BIOSIS NO.: 000093103978
A XANTHOMONAS PATHOGENICITY LOCUS IS INDUCED BY SUCROSE AND SULFUR-CONTAINING AMINO ACIDS 1992

13/6/127 (Item 44 from file: 5) 08066251 BIOSIS NO.: 000093087699
EXPRESSION OF THE XANTHOMONAS-CAMPESTRIS PATHOVAR VESICATORIA HRP GENE CLUSTER WHICH DETERMINES PATHOGENICITY AND HYPERSENSITIVITY ON PEPPER AND TOMATO IS PLANT INDUCIBLE 1992

13/6/128 (Item 45 from file: 5) 07983705 BIOSIS NO.: 000042035103
MOLECULAR ANALYSIS OF PLANT DEFENSE RESPONSES TO PLANT PATHOGENS 1991

13/6/129 (Item 46 from file: 5) 07977756 BIOSIS NO.: 000093045334
XANTHOMONAS-CAMPESTRIS PV. TRANSLUCENS GENES DETERMINING HOST-SPECIFIC VIRULENCE AND GENERAL VIRULENCE ON CEREALS IDENTIFIED BY TN5-GUSA INSERTION MUTAGENESIS 1991

13/6/130 (Item 47 from file: 5) 07944548 BIOSIS NO.: 000042019821
TRANSCRIPTIONAL ORGANIZATION AND EXPRESSION OF THE PSEUDOMONAS-SYRINGAE PV. SYRINGAE 61 HRP GENE CLUSTER 1991

13/6/131 (Item 48 from file: 5) 07944178 BIOSIS NO.: 000042019451
ACTIVE OXYGEN INDUCTION IN TOBACCO CELL SUSPENSIONS TREATED WITH PSEUDOMONAS-FLUORESCENS CONTAINING THE COSMID PHIR11 AND WITH STRAINS CONTAINING TNPHA MUTATIONS IN THE HRP CLUSTER 1991

13/6/132 (Item 49 from file: 5) 07869821 BIOSIS NO.: 000092129187
CHARACTERIZATION OF THE HRP CLUSTER FROM PSEUDOMONAS-SYRINGAE PATHOVAR SYRINGAE 61 AND TNPHOA TAGGING OF GENES ENCODING EXPORTED OR MEMBRANE-SPANNING HRP PROTEINS 1991

13/6/133 (Item 50 from file: 5) 07777330 BIOSIS NO.: 000092080701
A PATHOGENICITY LOCUS FROM XANTHOMONAS-CITRI ENABLES STRAINS FROM SEVERAL PATHOVARS OF XANTHOMONAS-CAMPESTRIS TO ELICIT CANKER-LIKE LESIONS ON CITRUS 1991

13/6/134 (Item 51 from file: 5) 07616670 BIOSIS NO.: 000091134554
CLONING OF GENES AFFECTING POLYGALACTURONASE PRODUCTION IN PSEUDOMONAS-SOLANACEARUM 1991

13/6/135 (Item 52 from file: 5) 07503841 BIOSIS NO.: 000091077710
ISOLATION OF A GENE CLUSTER FROM XANTHOMONAS-CAMPESTRIS PATHOVAR VESICATORIA THAT DETERMINES PATHOGENICITY AND THE HYPERSENSITIVE RESPONSE ON PEPPER AND TOMATO 1991

13/6/136 (Item 53 from file: 5) 07498444 BIOSIS NO.: 000091072313
GENETIC AND TRANSCRIPTIONAL ORGANIZATION OF THE HRP CLUSTER OF PSEUDOMONAS-SYRINGAE PATHOVAR PHASEOLICOLA 1991

13/6/137 (Item 54 from file: 5) 07393697 BIOSIS NO.: 000040019356
TNPHOA TAGGING OF PSEUDOMONAS-SYRINGAE PATHOVAR SYRINGAE HRP GENES ENCODING POTENTIALLY EXPORTED PROTEINS 1990

13/6/138 (Item 55 from file: 5) 07393522 BIOSIS NO.: 000040019181
AN AVIRULENCE FUNCTION FROM PSEUDOMONAS-SYRINGAE PATHOVAR TOMATO IS LOCATED WITHIN A HRP CLUSTER 1990

13/6/139 (Item 56 from file: 5) 07330681 BIOSIS NO.: 000090110583
A PLANT-INDUCIBLE GENE OF XANTHOMONAS-CAMPESTRIS PATHOVAR CAMPESTRIS ENCODES AN EXOCELLULAR COMPONENT REQUIRED FOR GROWTH IN THE HOST AND HYPERSENSITIVITY ON NONHOSTS 1990

13/6/140 (Item 57 from file: 5) 07112442 BIOSIS NO.: 000039049136
STRUCTURE FUNCTION REGULATION AND EVOLUTION OF GENES INVOLVED IN PATHOGENICITY THE HYPERSENSITIVE RESPONSE AND PHASEOLOTOXIN IMMUNITY IN THE BEAN HALO BLIGHT PATHOGEN 1990

13/6/141 (Item 58 from file: 5) 07037850 BIOSIS NO.: 000089119404
BACTERIA EXPRESSING AVIRULENCE GENE D PRODUCE A SPECIFIC ELICITOR OF THE SOYBEAN HYPERSENSITIVE REACTION 1990

13/6/142 (Item 59 from file: 5) 06953682 BIOSIS NO.: 000089075688
A SECOND CLUSTER OF GENES THAT SPECIFY PATHOGENICITY AND HOST RESPONSE IN PSEUDOMONAS-SOLANACEARUM 1990

13/6/143 (Item 60 from file: 5) 06798008 BIOSIS NO.: 000088107447
THE PREDICTED PROTEIN PRODUCT OF A PATHOGENICITY LOCUS FROM PSEUDOMONAS-SYRINGAE PATHOVAR PHASEOLICOLA IS HOMOLOGOUS TO A HIGHLY CONSERVED DOMAIN OF SEVERAL PROKARYOTIC REGULATORY PROTEINS 1989

13/6/144 (Item 61 from file: 5) 06655769 BIOSIS NO.: 000087097946
HEART RATE RESPONSES AND THE ESTIMATED ENERGY REQUIREMENTS OF PLAYING WATER POLO 1988

13/6/145 (Item 62 from file: 5) 06147473 BIOSIS NO.: 000085110625
GENES REQUIRED FOR PATHOGENICITY AND HYPERSENSITIVITY ARE CONSERVED AND INTERCHANGEABLE AMONG PATHOVARS OF PSEUDOMONAS-SYRINGAE 1988

13/6/146 (Item 63 from file: 5) 05597337 BIOSIS NO.: 000083070477
IMMUNOHISTOCHEMICAL LOCALIZATION OF IN TUBULIN THE ISCHEMIC RETINA OF GERBILS 1986

13/6/147 (Item 64 from file: 5) 05185690 BIOSIS NO.: 000082026311
PURIFICATION OF A HUMAN RED BLOOD CELL PROTEIN SUPPORTING THE SURVIVAL OF CULTURED CENTRAL NERVOUS SYSTEM NEURONS AND ITS IDENTIFICATION AS CATALASE 1986

13/7/26 (Item 26 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
09295410 97250560 PMID: 9096416
Hrp pilus: an hrp-dependent bacterial surface appendage produced by Pseudomonas syringae pv. tomato DC3000.
Roine E; Wei W; Yuan J; Nurmiaho-Lassila EL; Kalkkinen N; Romantschuk M; He SY
Department of Biosciences, University of Helsinki, Finland.
Proceedings of the National Academy of Sciences of the United States of America (UNITED STATES) Apr 1 1997, 94 (7) p3459-64, ISSN 0027-8424 Journal Code: PV3 Languages: ENGLISH Document type: Journal Article Record type: Completed
Hypersensitive response and pathogenicity (hrp) genes control the ability of major groups of plant pathogenic bacteria to elicit the hypersensitive response (HR) in resistant plants and to cause disease in susceptible plants. A number of Hrp proteins share significant similarities with components of the type III secretion apparatus and flagellar assembly apparatus in animal pathogenic bacteria. Here we report that Pseudomonas syringae pv. tomato strain DC3000 (race 0) produces a filamentous surface appendage (Hrp pilus) of 6-8 nm in diameter in a solid minimal medium that induces hrp genes. Formation of the Hrp pilus is dependent on at least two hrp genes, hrpS and hrpH (recently renamed hrcC), which are involved in gene regulation and protein secretion, respectively. Our finding of the Hrp pilus, together with recent reports of Salmonella typhimurium surface appendages that are involved in bacterial invasion into the animal cell and of the Agrobacterium tumefaciens virB-dependent pilus that is involved in the transfer of T-DNA into plant cells, suggests that surface appendage formation is a common featur animal and plant pathogenic bacteria in the infection of eukaryotic cells. Furthermore, we have identified HrpA as a major structural protein of the Hrp pilus. Finally, we show that a nonpolar hrpA mutant of P. syringae pv. tomato DC3000 is unable to form the Hrp pilus or to cause either an HR or disease in plants.

13/7/30 (Item 30 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
08959722 96305752 PMID: 8768370
Expression of the Pseudomonas syringae avirulence protein AvrB in plant cells alleviates its dependence on the hypersensitive response and pathogenicity (Hrp) secretion system in eliciting genotype-specific hypersensitive cell death.
Gopalan S; Bauer DW; Alfano JR; Loniello AO; He SY; Collmer A
Department of Energy, Michigan State University, East Lansing 48824-1312, USA.
Plant cell (UNITED STATES) Jul 1996, 8 (7) p1095-105, ISSN 1040-4651 Journal Code: BJU Comment in Plant Cell. 1996 Jul;8(7) 1091-3 Languages: ENGLISH Document type: Journal Article Record type: Completed
The nonpathogenic bacteria Pseudomonas fluorescens and Escherichia coli can elicit a genotype-specific hypersensitive response (HR) in plants if they express both the HR and pathogenesis (Hrp) protein secretion system and the HrpZ harpin from P. syringae pv syringae 61 and a P. syringae avirulence (avr) gene whose presence is recognized by a corresponding disease resistance gene in the plant. We have found that the recognition event appears to require transfer of the Avr protein into the plant cell. Elicitation of a genotype-specific HR was observed with avrB+ P. fluorescens in soybean and Arabidopsis plants carrying resistance genes RPG1 and RPM1, respectively, and with avrPto+ E. coli in tomato plants carrying resistance gene PTO, but only if the Hrp secretion system, HrpZ, and the appropriate Avr proteins were produced in the same bacterial cell. The failure of avrB hyperexpression and exogenous AvrB or HrpZ to alleviate these requirements in soybean and Arabidopsis suggests that the site of AvrB action is not in the bacterial cell or plant apoplast. An Arabidopsis rps3 (rpm1) glabrous1 mutant was transfo with constructs expressing avrB and was crossed with an Arabidopsis ecotype Columbia (RPM1 GLABROUS1) plant. F1 seedlings (identified by their kanamycin-resistant, pubescent phenotype) exhibited extensive necrosis on cotyledon leaves 10 days postgermination. Ecotype Columbia and rps3-1 leaves biolistically cobombarded with plasmids expressing the beta-glucuronidase (GUS) gene and avrB failed to produce GUS activity (indicative of cell death) only when RPM1 and avrB were present in the leaf. Thus, both stable and transient expression of avrB in Arabidopsis resulted in RPM1-dependent necrosis, and the only demonstrable site of action for AvrB was inside plant cells.

13/7/32 (Item 32 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
08828146 96165260 PMID: 8576039
Expression and localization of HrpA1, a protein of Xanthomonas campestris pv. vesicatoria essential for pathogenicity and induction of the hypersensitive reaction.
Wengelnik K; Marie C; Russel M; Bonas U
Institut des Sciences Vegetales, Centre National de la Recherche Scientifique, Gif-sur-Yvette, France.
Journal of bacteriology (UNITED STATES) Feb 1996, 178 (4) p1061-9, ISSN 0021-9193 Journal Code: HH3 Languages: ENGLISH Document type: Journal Article Record type: Completed

The hrp cluster of the pepper and tomato pathogen Xanthomonas campestris pv. vesicatoria is required for both pathogenicity on susceptible host plants and induction of the hypersensitive reaction on resistant plants. The hrpA locus is located at the left end of the 25-kb hrp region and encodes a single 64-kDa Hrp protein, HrpA1, which belongs to the PulD superfamily of proteins involved in type II and type III protein secretion. In this study, we developed a defined medium without any plant-derived molecules that induces expression of hrpA in vitro. The hrpA transcription start site was mapped in the coding region of the hrpB8 gene, which is the last gene of the hrpB operon. The inducible hrpA promoter shows no homology to known promoter elements or other hrp loci of X. campestris pv. vesicatoria. hrpA expression was shown to be independent of the hrp regulatory gene hrpX. The amino acid sequence of the HrpA1 protein is predicted to contain an N-terminal signal sequence and no further transmembrane domains and to be rich in beta-sheet stretches. Expression of HrpA1 in Escherichia coli cells causes induction of the psp operon like some of its counterparts, suggesting some commonality of function and that HrpA1 forms multimers. The protein product of hrpA1 was identified by using a specific polyclonal antibody. Cell fractionation studies demonstrated that the HrpA1 protein is localized in the outer membrane of X. campestris pv. vesicatoria. HrpA1 is the first component of the Hrp secretion system whose localization has been determined in the original organism.

13/7/43 (Item 43 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
08113957 94148001 PMID: 8313899
PopA1, a protein which induces a hypersensitivity-like response on specific Petunia genotypes, is secreted via the Hrp pathway of Pseudomonas solanacearum.
Arlat M; Van Gijsegem F; Huet JC; Pernollet JC; Boucher CA
Laboratoire de Biologie Moleculaire des Relations Plantes Microorganismes CNRS-INRA, Castanet Tolosan, France.
EMBO journal (ENGLAND) Feb 1 1994, 13 (3) p543-53, ISSN 0261-4189 Journal Code: EMB Languages: ENGLISH
Document type: Journal Article Record type: Completed
This paper describes the identification of a new class of extracellular bacterial proteins, typified by PopA1 and its derivative PopA3, which act as specific hypersensitive response (HR) elicitors. These two heat-stable proteins, with HR -like elicitor activities on tobacco (non-host plant) but without activity on tomato (host plant), have been characterized from the supernatant of the plant pathogenic bacterium Pseudomonas solanacearum strain GMI1000. These two proteins induced the same pattern of response on Petunia, as a function of the genotypes tested. popA, the structural gene for PopA1, maps outside of the hrp gene cluster but belongs to the hrp regulon. The amino acid sequence of PopA1 does not show homology to any characterized proteins. Its secretion is dependent on hrp genes and is followed by stepwise removal of the 93 amino-terminal amino acids, producing the protein PopA3. Petunia lines responsive to PopA3 and its precursors were resistant to infection by strain GMI1000, whereas non-responsive lines were sensitive, suggesting that popA could be an avirulence gene. A popA mutant remained fully pathogenic on sensitive plants, indicating that this gene is not essential for pathogenicity. While lacking PopA1, this mutant, which remained avirulent on tobacco and on resistant Petunia lines, still produced additional extracellular necrogenic compounds. On the basis of both their structural features and the biological properties of the popA mutant, PopA1 and PopA3 clearly differ from hairpins characterized in other plant pathogenic bacteria.

13/7/44 (Item 44 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
08093790 93302711 PMID: 8316211
Homology between the HrpO protein of Pseudomonas solanacearum and bacterial proteins implicated in a signal peptide-independent secretion mechanism.
Gough CL; Genin S; Lopes V; Boucher CA
Laboratoire de Biologie Moleculaire des Relations Plantes Microorganismes, INRA-CNRS, Castanet-Tolosan, France.
Molecular & general genetics (GERMANY) Jun 1993, 239 (3) p378-92, ISSN 0026-8925 Journal Code: NGP Languages: ENGLISH Document type: Journal Article Record type: Completed
A region of approximately 22 kb of DNA defines the large hrp gene cluster of strain GMI1000 of Pseudomonas solanacearum. The majority of mutants that map to this region have lost the ability to induce disease symptoms on tomato plants and are no longer able to elicit a hypersensitive reaction (HR) on tobacco, a non-host plant. In this study we present the complementation analysis and nucleotide sequence of a 4772 bp region of this hrp gene cluster. Three complete open reading frames (ORFs) are predicted within this region. The corresponding putative proteins, HrpN, HrpO and HpaP, have predicted sizes of 357, 690 and 197 amino acids, respectively, and predicted molecular weights of 38,607, 73,990 and 21,959 dalton, respectively. HrpN and HrpO are both predicted to be hydrophobic proteins with potential membrane-spanning domains and HpaP is rich in proline residues. A mutation in hpaP (for hrp associated) does not affect the HR on tobacco or the disease on tomato plants. None of the proteins is predicted to have an N-terminal signal sequence, which would have indicated that the proteins are exported. Considerable sequence similarities were found between HrpO and eight known or predicted prokaryotic proteins: LcrD of Yersinia pestis and Y. enterocolitica, FlbF of Caulobacter crescentus, FlhA of Bacillus subtilis, MxiA and VirH of Shigella flexneri, InvA of Salmonella typhimurium and HrpC2 of Xanthomonas campestris pv. vesicatoria. These homologies suggest that certain hrp genes of phytopathogenic bacteria code for components of a secretory system, which is related to the systems for secretion of flagellar proteins, Ipa proteins of Shigella flexneri and the Yersinia Yop proteins. Furthermore, these homologous proteins have the common feature of being implicated in a distinct secretory mechanism, which does not require the cleavage of a signal peptide. The sequence similarity between HrpO and HrpC2 is particularly high (66% identity and 81% similarity) and the amino acid sequence comparison between these two proteins presented here reveals the first such sequence similarity to be shown between Hrp proteins of P. solanacearum and X. campestris. An efflux of plant electrolytes was found to be associated with the interactions between P. solanacearum and both tomato and tobacco leaves. This phenomenon may be part of the mechanism by which hrp gene products control and determine plant-bacterial interactions, since hrpO mutants induced levels of leakage which were significantly lower than those induced by the wild type on each plant.

13/7/48 (Item 48 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
07809248 93015750 PMID: 1400238
The Pseudomonas syringae pv. syringae 61 hrpH product, an envelope protein required for elicitation of the hypersensitive response in plants.
Huang HC; He SY; Bauer DW; Collmer A
Department of Plant Pathology, Cornell University, Ithaca, New York 14853.
Journal of bacteriology (UNITED STATES) Nov 1992, 174 (21) p6878-85, ISSN 0021-9193 Journal Code: HH3
Languages: ENGLISH Document type: Journal Article Record type: Completed
Pseudomonas syringae pv. syringae 61 contains a 25-kb cluster of hrp genes that are required for elicitation of the hypersensitive response (HR) in tobacco. TnphoA mutagenesis of cosmid pHIR11, which contains the hrp cluster, revealed two genes encoding exported or inner-membrane-spanning proteins (H.-C. Huang, S. W. Hutcheson, and A. Collmer, Mol. Plant-Microbe Interact. 4:469-476, 1991). The gene in complementation group X, designated hrpH, was subcloned on a 3.1-kb SalI fragment into pCPP30, a broad-host-range, mobilizable vector. The subclone restored the ability of hrpH mutant P. syringae pv. syringae 61-2089 to elicit the HR in tobacco. DNA sequence analysis of the 3.1-kb SalI fragment revealed a single open reading frame encoding an 81,956-Da preprotein with a typical amino-terminal signal peptide and no likely inner-membrane-spanning hydrophobic regions. hrpH was expressed in the presence of [35S]methionine by using the T7 RNA polymerase-promoter system and vector pT7-3 in Escherichia coli and was shown to encode a protein with an apparent molecular weight of 83,000 on sodium dodecyl sulfate-polyacrylamide gels. The HrpH protein in E. coli was located in the membrane fraction and was absent from the periplasm and cytoplasm. The HrpH protein possessed similarity with several outer membrane proteins that are known to be involved in protein or phage secretion, including the Klebsiella oxytoca PulD protein, the Yersinia enterocolitica YscC protein, and the pIV protein of filamentous coliphages. All of these proteins possess a possible secretion motif, GG(X)12VP(L/F)LXXIPXIGXL(F/L), near the carboxyl terminus, and they lack a carboxyl-terminal phenylalanine, in contrast to other outer membrane proteins with no known secretion function. These results suggest that the P. syringae pv. syringae HrpH protein is involved in the secretion of a proteinaceous HR elicitor.

13/7/56 (Item 56 from file: 155) DIALOG(R)File 155:MEDLINE(R) (c) format only 2000 Dialog Corporation. All rts. reserv.
07053932 93313957 PMID: 8324821
Pseudomonas syringae pv. syringae harpinPss: a protein that is secreted via the Hrp pathway and elicits the hypersensitive response in plants.
He SY; Huang HC; Collmer A
Department of Plant Pathology, Cornell University, Ithaca, New York 14853.
Cell (UNITED STATES) Jul 2 1993, 73 (7) p1255-66, ISSN 0092-8674 Journal Code: CQ4 Languages: ENGLISH
Document type: Journal Article Record type: Completed
The ability of P. syringae to elicit the hypersensitive response in nonhost plants or pathogenesis in hosts is controlled by hrp genes. The P. syringae pv. syringae 61 hrpZ gene encodes harpinPss, a 34.7 kd extracellular protein that elicits hypersensitive necrosis in tobacco and other plants. HarpinPss is heat stable, glycine rich, dissimilar in amino acid sequence to any known protein, produced only in apoplastic fluid-mimicking minimal media, and secreted in a HrpH-dependent manner. The carboxy-terminal 148 amino acid portion of harpinPss contains two directly repeated sequences of GGGLGTP and QTGT and is sufficient and necessary for elicitor activity. The necrosis elicited by harpinPss is an active response of the plant, which can be inhibited by alpha-amanitin, cycloheximide, lanthanum chloride, or sodium vanadate.